

LNW Route

Route Strategic Plan

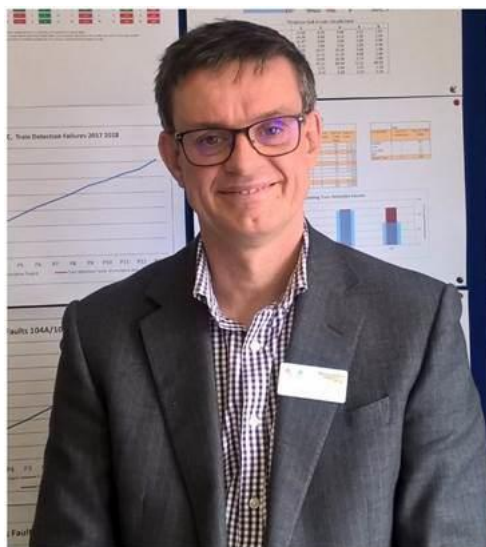
Delivering for our customers

Version 3.0 dated March 2019
Template V4.2

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1. Foreword and summary



M. J. Frobisher

Martin Frobisher
Route Managing Director
LNW Route

Foreword by Martin Frobisher

London North Western (LNW) Route is the economic backbone of Britain. The West Coast Mainline, Europe's busiest mixed-use railway, connects six of Britain's eight largest cities. An efficient and reliable service on the Route is crucial to our success as a nation.

While demand for rail travel is growing at 1% a year nationally, on LNW it is growing at 2% per annum. This plan for Control Period 6 (CP6 – 2019 to 2025) continues to sustain that growth whilst delivering strong improvements in passenger satisfaction.

LNW Route, the backbone of Britain, has a team that delivers. In CP5, we have achieved great performance for our customers and have developed ever more collaborative ways of working to continue to improve and get better every day. I am determined that we will continue this in CP6 and remain one of the best performing Routes in the country. We will do this against the backdrop of more trains, more passengers and freight, and facilitating the construction of HS2.

I am also determined that we will become more efficient and make the most effective use of the funding provided in CP6, as well as continuing to improve the safety of the railway for our passengers, public and workforce.



My vision for LNW Route in CP6 is:-

“One team, safely delivering brilliant services for customers and taxpayers”

This plan documents our strategy for successfully realising this vision.



Summary

1.1 One Team

We will be applying LEAN management methods to assist us in achieving our vision for CP6 and deliver this CP6 Route Strategic Plan. This will translate our key objectives into action plans and engage our Route teams in doing the right things to achieve them.

We are creating one all-encompassing team which works collaboratively across all parts of the regional transport industry. We will work closely with the newly elected city Mayors and their teams to provide a seamless service for customers across all modes of transport. This integrated transport approach will include planning rail work whilst also considering work planned by Highways England and major public events such as the Commonwealth Games in 2022. We will work closely with Midlands Connect to enhance the rail commuting options into the City of Birmingham in order to ease the impact of HS2 construction on the road network.

We have a long-term strategy to build engagement by creating an environment within Team LNW which is caring and inclusive. This will deliver a high performing team which works across industry boundaries. There will be a total commitment to deliver better every day through structured continuous improvement.

The following sections of this plan explain how we will improve the culture and the capability of the organisation. We will realise benefits from a strong diversity and inclusion strategy. We will deliver efficiency through a successful industrial relations strategy and we will develop a pipeline of talent for the future.

1.2 Safety

LNW, Backbone of Britain, is proud to be a part of the safest railway in Europe and we will build upon these strengths. This plan will deliver improvements to passenger, public and workforce accident risk and to the environment

During CP5, Team LNW has reduced the workforce lost time injury frequency rate (LTIFR) by 30%. We will continue to build upon this success and will reduce it by two thirds by the end of CP6 by continuing to focus on slip, trip and falls and manual handling, the common causes of accidents, and maturing our safety culture and leadership. We aspire to achieve a 0.17 LTIFR in line with other world class organisations.

Our plan also includes some ambitious safety initiatives including a commitment to safer trackside working by abolishing Victorian lookout warning with flags as the sole method of protection for our workforce. We will also change the focus of our workforce safety programme by placing a greater emphasis upon our colleague's health and wellbeing which includes our aim to become industry leaders in managing mental health.

1.3 Delivering

LNW, Backbone of Britain, continuing to deliver successfully during CP6 is reliant upon the stability of our programme. We have shown great attention to detail preparing the CP6 workbanks and have developed better ways of managing and sharing information within our organisation and amongst our delivery partners. The programme has been integrated and prioritised and is detailed in Section 10 of this plan.

A strong plan enables us to offer certainty to our supply chain. In return they will enable us to hit our milestones and achieve substantial gains in efficiency. We will continue to deliver improvements in value for money through structured continuous improvement.

We will enable the successful delivery of the HS2 project, the most important investment in the Route in CP6. We will enable the project to meet its commitments to government whilst making its construction seamless to the travelling public. We recognise that continued growth in demand on the West Coast Main Line is building the market for HS2 once the Euston – Birmingham phase is complete. Success today is breeding success for tomorrow.

1.4 Brilliant service for Customers

Team LNW will deliver brilliant service to customers through robust asset management. We will develop an integrated management system for our asset renewals works and will seek certification to ISO55001. We will make investments in remote asset condition monitoring and improve our asset sustainability wherever possible. We will provide improvements in infrastructure reliability to all operators on our Route.

Team LNW will maintain its strong relationships with its customers by continuing to deliver great, and ever improving, results. We will also continue to develop partnerships with our customers which will be delivered through a structured ISO44001 framework.

We will also deliver a proactive and innovative communications campaign within the industry, to our lineside neighbours, and to the travelling public.





1.5 And Taxpayers

Our plan details how we will achieve a culture of cost efficiency for the taxpayer. We have been very successful in developing a positive safety culture. We will apply these same techniques and levers to achieve a culture of cost efficiency. Goals and objectives will be more clearly defined than ever before and efficiencies generated will be reinvested. There will be ever present reminders of the need for cost efficiency in our workplace.

Being easy to deal with is an important element of Team LNW's plan. We will improve our business processes. This will make it easier for other organisations to invest in the railway. We have established a dedicated business development team to work closely with external organisations to maximise this opportunity.

All investments and renewals work will be based upon a sound business case, with clearly defined benefits which will be tracked more closely. We have set challenging targets for efficiencies in CP6 and we will work closely with our teams, delivery partners and suppliers to realise them.

Team LNW

“One team, safely delivering brilliant services for customers and taxpayers”

Financial summary for CP6

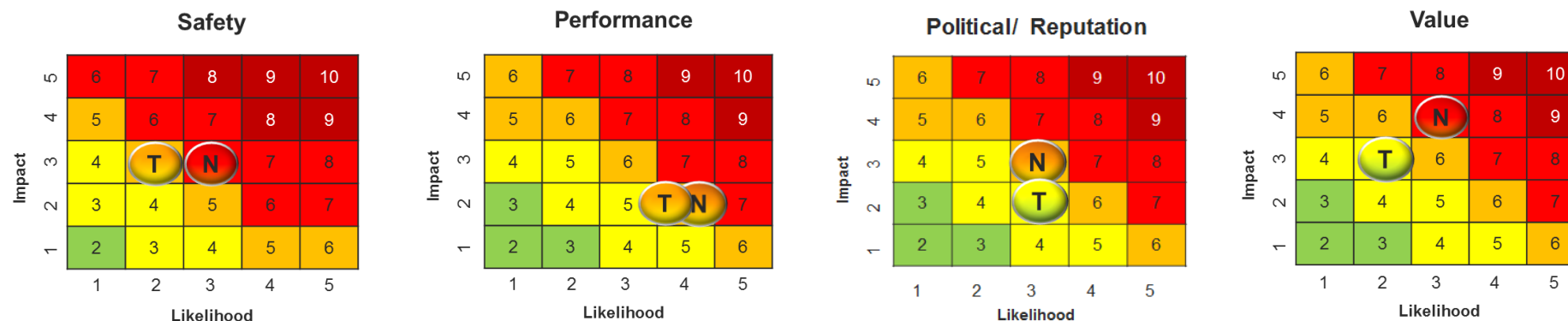
Cash prices	CP5 (£m)	CP6 (£m)					CP7 (£m)	
	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26
Operations	162	155	161	166	171	176	188	194
Maintenance	326	381	396	408	421	434	435	440
Support	18	13	13	11	13	12	25	26
Reactive Maintenance	33	32	33	34	33	32	29	29
Risk Funding	0	15	60	84	104	141	0	0
Total Renewals	426	466	593	711	659	558	759	744
Non – Controllable Costs	0	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Total Expenditure	965	1,060	1,256	1,412	1,399	1,351	1,434	1,431

Risks and challenges in CP6

- HS2 will be under construction on and around the Route at numerous locations
- Accommodating growth at Euston over CP6 with 16 rather than 18 platforms
- This also includes major works that are planned to commence at Crewe, a key part of the West Coast Main Line
- Several new train fleets will be introduced and will take time to achieve expected reliability levels
- More trains will mean greater wear and tear on our infrastructure
- Longer operating days will reduce non-disruptive access opportunities
- Greater customer expectations in CP6 to improve on current performance
- East West Rail Phase 2 will be under construction with a key interface at Bletchley
- Transfer of Worcester area to LNW Route

KEY	
	= NOW – Current position
	= TARGET – position at end of CP6

Risk heat maps



2. Putting our CP6 Vision into practice

2.1. Introduction



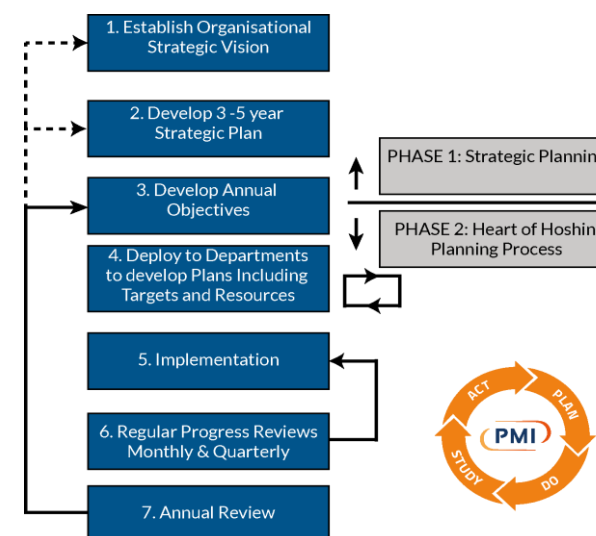
Involve the majority, not the minority

We have used Hoshin Kanri X-matrices and A3 Team Charters to capture our initiatives and plans, show accountability and link to how results are measured. Using a Hoshin Kanri X-matrix we have summarised our strategic plan in terms of goals, strategies, strategic initiatives and owners, whilst we are using the A3 Team Charter instead of Short Form Strategies to foster close alignment with our strategic initiatives and to provide clarity to each team so they all understand the problem and opportunity, and how they will be involved in achieving the delivery of the plan.

Using this process is helping us align our strategic objectives with the LNW Route teams and action plans needed to make them happen. Included within this approach is continuous improvement via other tools such as 'Plan-Do-Check-Act' (PDCA) in the LEAN management tool kit.

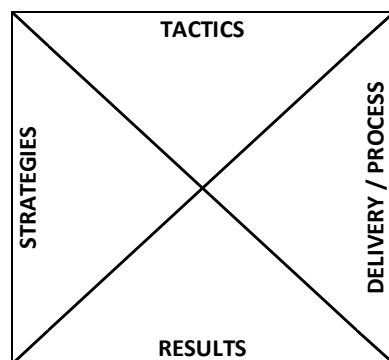
On LNW Route, we are applying LEAN management methods to assist us in achieving our vision for CP6 as detailed in Section 1 above and deliver this CP6 Route Strategic Plan. This is designed to translate our key objectives into action plans and engage our Route teams in doing the right things to achieve them.

Our approach is summarised on the left and we have developed a line of sight from our vision for CP6 through to individual action plans and objectives for staff.



Hoshin Kanri model

2.2. Master X-Matrix



A Hoshin Kanri X matrix is a single page document that translates a strategic business plan into a delivery plan. Our master X-matrix for CP6 has been developed by our LNW Route Executive team to align with the vision for LNW Route in CP6 and form the basis for the development of this plan. It includes twenty strategic initiatives that have been identified as needed to support our five key strategies, the metrics by which progress will be measured and by which members of the LNW Route Executive team will be held accountable for their delivery.

The matrix is split into primary segments covering strategies, tactics, delivery/process and results. In the strategy section we have split our vision for CP6 into six key strategies as follows:-

- Safety
- One Team
- Brilliant Services for Customers
- Delivering
- Brilliant Services for Taxpayers
- Delivering HS2 integration

We have structured our plan and scorecard to reflect these strategies so that outputs and results are directly linked. HS2 Integration has been separately identified as it is such a critical issue for us in CP6 and it has its own section later in this plan. The next section of the matrix then includes the tactics we propose to employ in CP6 to achieve or strategic vision. We have identified the following strategic initiatives to deliver our key strategies and allocated them to appropriate sections of this plan:-

Safety	Create an enhanced safety improvement programme - "Everyone Home Safe, Every Day"
	Create an enhanced assurance regime linked to risk management
	Create an Environment & Sustainability Excellence programme
One Team	Create a diverse, caring & inclusive culture underpinned with the right behaviours
	Create an organisational capability and development programme
	Develop the capacity and capability of Works Delivery to ensure delivery of the agreed CP6 capital programme
Brilliant Service for Customers	Create a programme to deliver excellent customer service
	Programme to deliver Customer CP6 performance trajectories
	Work within ISO44001 (Collaborative Working) framework
	Develop an Integrated Transport Planning Approach
Sustainability & Asset Management	Communications campaign - internal, industry, lineside neighbours, public
	Seek ISO55001 (Asset Management Standard) certification
	Develop & implement Supply Chain improvement programme
Brilliant Service for Taxpayers	Adopt & extend Structured Continuous Improvement - "Better Every Day"
	Deliver and track CP6 cost efficiency programme
	Create a business planning improvement programme
	Create a risk management improvement programme
	Support & deliver the Enhancements needed to accommodate passenger and freight growth
Delivering HS2 Integration	Grow external investment in LNW (including "Open for Business")
	Deliver HS2 Integration

Continuing the Hoshin Kanri approach, each executive team member has also developed their own Level 2 X-matrix and associated strategic initiatives to allow cascade through our organisation of appropriate initiatives and objectives that support achievement of our vision for CP6. The same approach is being cascaded throughout our organisation to level 3 and beyond so that the majority of people are involved in this process, and as a result everyone understands how their role fits with the delivery of our vision and plan for CP6 and has clear objectives and measures to support our goals.

A copy of our master X-matrix is included below.

POLICY DEPLOYMENT - CP6						Level Creation Date Review Frequency		1 Feb-18 Annually		Owner & Team Martin Froisher LWU Exec																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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3. Route objectives

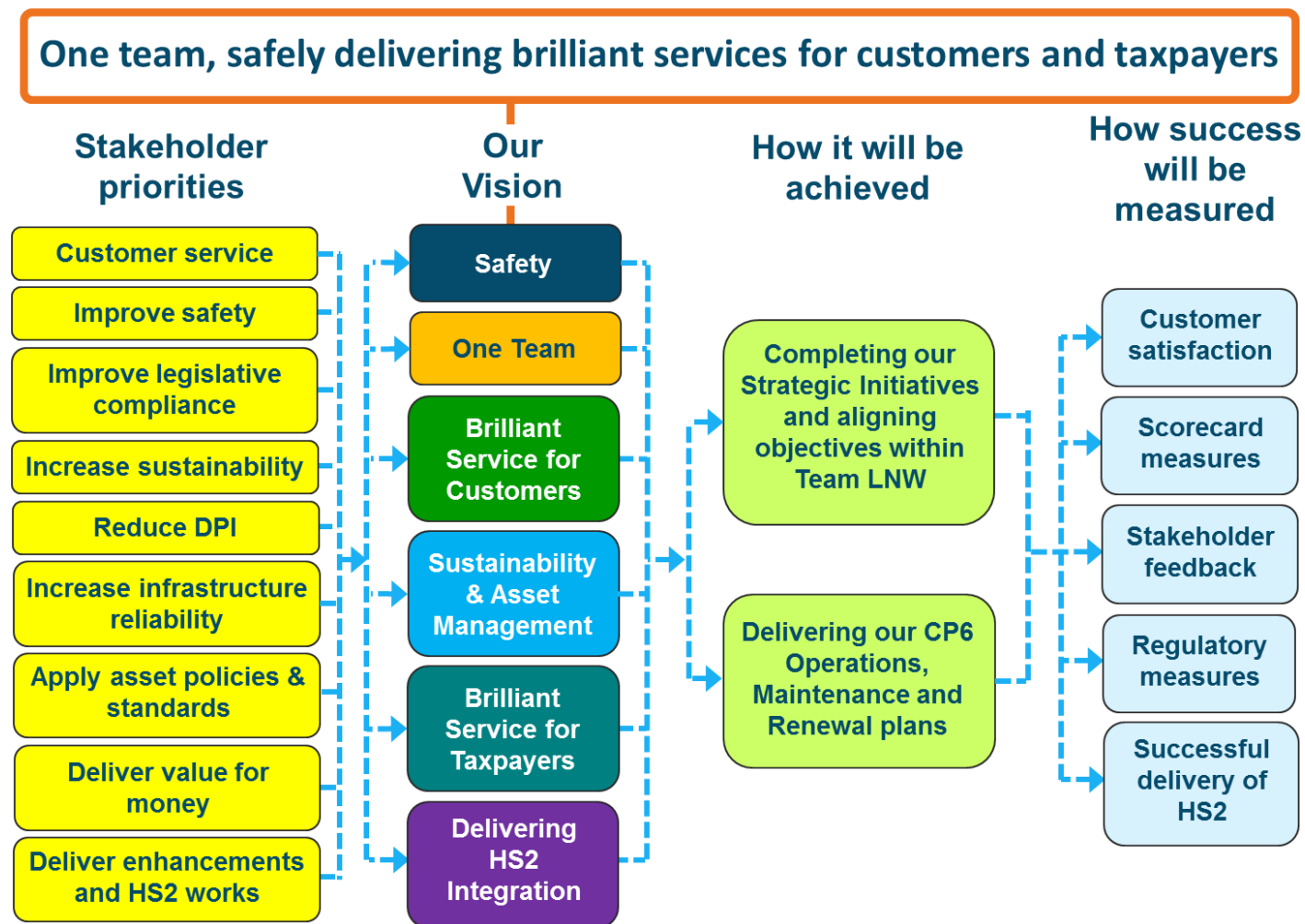
This plan is predicated on the key assumptions laid out in Appendix B and will be impacted as these assumptions change

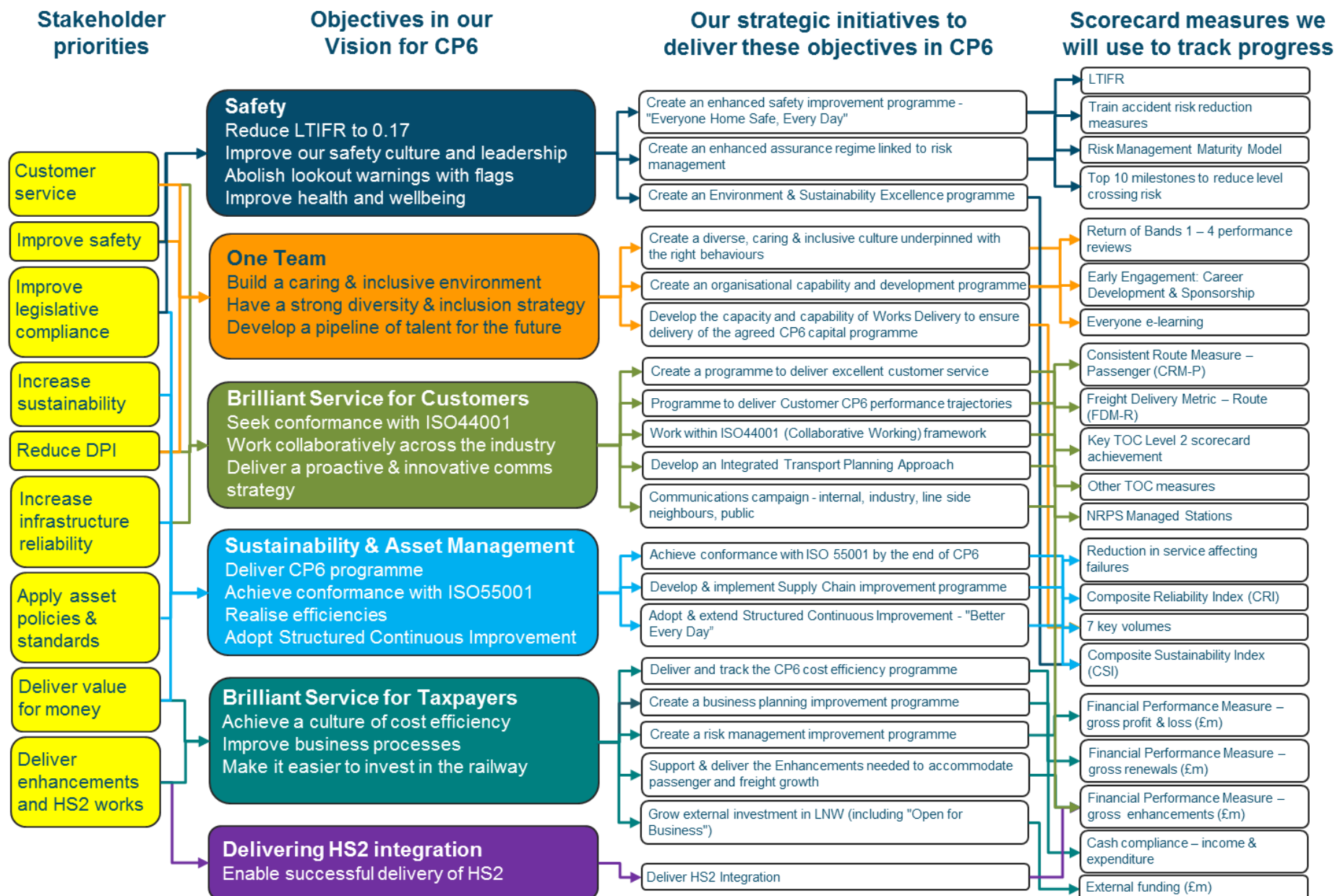
3.1. Line of sight from stakeholder priorities to scorecard measures

This plan for CP6 has been developed in consultation with our stakeholders. We have set out our vision to meet our stakeholder priorities in section 1, and in section 2 we have outlined the approach we will use to cascade the strategic initiatives that will deliver this vision. This section then details the measures by which we will track progress towards achieving our vision in CP6.

In the diagram opposite, we have mapped out the line of sight from the stakeholder priorities summarised in Appendix A through our vision to how they will be achieved and how success will be measured.

A more detailed version itemising the strategic initiatives and the scorecard measures we will use to track progress is included on the following page.





3.2. Long Term Scorecard

Our scorecard has been structured to reflect the key strategies in our CP6 Vision and the approach outlined above. It contains objectives defined in terms of measures with trajectories and ranges we aim to achieve over CP6 grouped within the five areas of Safety, One Team, Brilliant Service for Customers, Sustainability & Asset Management, and Brilliant Service for Taxpayers.

Safety		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Lost Time Injury Frequency Rate (LTIFR)	WORSE THAN TARGET	0.48	0.41	0.34	0.27	0.20	0.17	0.15	
	TARGET	0.45	0.38	0.31	0.24	0.17	0.15	0.13	
	BETTER THAN TARGET	0.43	0.36	0.29	0.22	0.15	0.12	0.12	
Risk management Maturity Model (RM3)	WORSE THAN TARGET	6	6	6	6	6	6	6	
	TARGET	8	8	8	8	8	8	8	
	BETTER THAN TARGET	10	10	10	10	10	10	10	
Train accident risk reduction measures	WORSE THAN TARGET	60%	60%	60%	60%	60%	60%	60%	
	TARGET	80%	80%	80%	80%	80%	80%	80%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Top 10 milestones to reduce level crossing risk	WORSE THAN TARGET	6	6	6	6	6	6	6	
	TARGET	8	8	8	8	8	8	8	
	BETTER THAN TARGET	10	10	10	10	10	10	10	
One Team		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Return of Bands 1 to 4 performance reviews	WORSE THAN TARGET	80%	80%	80%	80%	80%	80%	80%	
	TARGET	90%	90%	90%	90%	90%	90%	90%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Early Engagement: Career Development & Sponsorship	WORSE THAN TARGET	80%	80%	80%	80%	80%	80%	80%	
	TARGET	90%	90%	90%	90%	90%	90%	90%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Everyone E-Learning	WORSE THAN TARGET	80%	80%	80%	80%	80%	80%	80%	
	TARGET	90%	90%	90%	90%	90%	90%	90%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Brilliant Service for Customers		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Consistent Route Measure – Passenger (CRM-P)	WORSE THAN TARGET	1.86	1.82	1.80	1.79	1.77	/	/	
	TARGET	1.71	1.62	1.58	1.55	1.52	/	/	
	BETTER THAN TARGET	1.54	1.42	1.36	1.32	1.27	/	/	
Freight Delivery Metric – Route (FDM-R)	WORSE THAN TARGET	93.1%	93.1%	93.1%	93.1%	93.1%	/	/	
	TARGET	94.1%	94.1%	94.1%	94.1%	94.1%	/	/	
	BETTER THAN TARGET	94.6%	94.6%	94.6%	94.6%	94.6%	/	/	

Brilliant Service for Customers		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Chiltern Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Merseyrail Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Transpennine Express Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Virgin Trains Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
West Midlands Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Northern Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
North of England Transformation Measures	WORSE THAN TARGET	80%	80%	80%	80%	80%	80%	80%	
	TARGET	90%	90%	90%	90%	90%	90%	90%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Cross Country Right Time Arrivals at Birmingham New Street (MAA)	WORSE THAN TARGET	30%	30%	30%	30%	30%	/	/	
	TARGET	37%	37%	37%	37%	37%	/	/	
	BETTER THAN TARGET	44%	44%	44%	44%	44%	/	/	
Arriva Rail London T3 Moving Annual Average (Euston – Watford Service Group)	WORSE THAN TARGET	90.2%	90.2%	90.2%	90.2%	90.2%	/	/	
	TARGET	91.7%	91.7%	91.7%	91.7%	91.7%	/	/	
	BETTER THAN TARGET	92.7%	92.7%	92.7%	92.7%	92.7%	/	/	
Caledonian Sleeper Right Time Arrivals (MAA)	WORSE THAN TARGET	75%	75%	75%	75%	75%	/	/	
	TARGET	80%	80%	80%	80%	80%	/	/	
	BETTER THAN TARGET	85%	85%	85%	85%	85%	/	/	
NRPS Managed Stations Score	WORSE THAN TARGET	81%	80%	81%	80%	81%	/	/	
	TARGET	82%	82%	82%	82%	82%	/	/	
	BETTER THAN TARGET	84%	83%	84%	83%	84%	/	/	

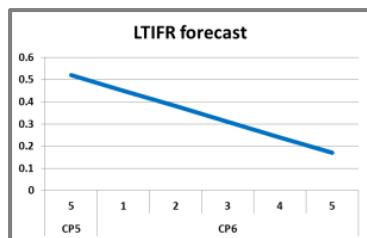
Sustainability and Asset Management Capability		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Reduction in Service Affecting Failures (SAF)	WORSE THAN TARGET	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	/	/	
	TARGET	1.0%	1.0%	1.0%	1.0%	1.0%	/	/	
	BETTER THAN TARGET	1.5%	1.5%	1.5%	1.5%	1.5%	/	/	
Composite Reliability Index (CRI)	WORSE THAN TARGET	-3.7%	-2.1%	-0.7%	0.8%	2.1%	/	/	
	TARGET	-1.1%	0.5%	1.9%	3.4%	4.7%	/	/	
	BETTER THAN TARGET	-0.7%	0.9%	2.3%	3.8%	5.1%	/	/	
Renewals - 7 key volumes	WORSE THAN TARGET	90%	90%	90%	90%	90%	/	/	
	TARGET	95%	95%	95%	95%	95%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Composite Sustainability Index (CSI)	WORSE THAN TARGET	/	/	/	/	/	/	/	
	TARGET	/	/	/	/	-3.5%	/	/	
	BETTER THAN TARGET	/	/	/	/	/	/	/	
Brilliant Service for Taxpayers		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Top investment milestones	WORSE THAN TARGET	80%	80%	80%	80%	80%	/	/	
	TARGET	90%	90%	90%	90%	90%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Financial Performance Measure – gross excl. enhancements (£m)	WORSE THAN TARGET	/	/	/	/	/	/	/	
	TARGET	0	0	0	0	0	/	/	
	BETTER THAN TARGET	/	/	/	/	/	/	/	
Financial Performance Measure – gross enhancements only (£m)	WORSE THAN TARGET	/	/	/	/	/	/	/	
	TARGET	0	0	0	0	0	/	/	
	BETTER THAN TARGET	/	/	/	/	/	/	/	
Cash compliance – income & expenditure	WORSE THAN TARGET	/	/	/	/	/	/	/	
	TARGET	0	0	0	0	0	/	/	
	BETTER THAN TARGET	/	/	/	/	/	/	/	
External funding (£m)	WORSE THAN TARGET	/	/	/	/	288	/	/	
	TARGET	/	/	/	/	328	/	/	
	BETTER THAN TARGET	/	/	/	/	363	/	/	

Achievability definitions (applies to “target” value)

RED	Very challenging, likely to require substantial organisational and cultural change to achieve and/or highly dependent on third party involvement
AMBER	Challenging, likely to require moderate organisational and cultural change to achieve and/or dependent on third party involvement
GREEN	Achievable, builds on existing organisational and cultural capabilities and little or no dependency on third parties for delivery

3.3. Context and Challenges of Scorecard measures

3.3.1. Safety



We have included the selected measures on our Long Term Scorecard to monitor the achievement of our safety objectives. The primary measure is our Lost Time Injury Frequency Rate (LTIFR) which we are targeting reducing from 0.5 to 0.17 over CP6. This is a challenging aspiration and we have structured our safety strategy (see Section 4 below) to achieve this aim. We

have also included two measures on train accident risk reduction measures and milestones to reduce level crossing risk as these are important measures for passenger and third party safety. Finally, we have included the Risk Management Maturity Model (RM3) measure which measures our achievement of milestones for health and safety risk management.

3.3.2. One Team

Our One Team objectives focus on how we are cascading our vision and objectives throughout our organisation, how we are creating a diverse, caring and inclusive culture within LNW Route, and continuing our approach of raising awareness of key issues, setting standards and promoting behaviours for the overall benefit of the Route, its staff, and stakeholders through e-learning.



3.3.3. Brilliant services for customers

Our scorecard above reflects achievement of the Level 2 scorecards we will agree with each of our operators on an annual basis. These include a range of measures specific to and agreed with each operator in addition to train performance metrics. Where we do not have a Level 2 scorecard for an operator, we have included a single

measure in this section as agreed with that operator that reflects a key aspect critical to their operations. A typical level 2 scorecard is illustrated on the left.

We have included a new measure to track achievement of our transformation initiatives in the North of England as these are important to many of our stakeholders in the region, and the National Rail Passenger Survey (NRPS) managed stations score reflecting passenger satisfaction with the managed stations on LNW Route.

This section also includes the composite and national performance measures to facilitate comparisons between Routes over the control period.

3.3.4. Sustainability and asset management

We have included the national measures in this section to allow comparisons to be made between Routes and to track our progress with understood measures.

In each year of CP6, we are forecasting a 1.0% reduction in the number of Service Affecting Failures (SAF). The number of SAF for each year of CP6 is calculated from the forecasted CP5 exit position with an assumption that a targeted improvement of 1% per annum is realised.

The Composite Reliability Indicator (CRI) is forecasted to decrease during the first year of CP6 mainly due to decline in the civils elements of this measure. We have an increasing Buildings asset base and initiatives such as Close Calls which have led to an increase in the number of urgent faults being raised on the Buildings portfolio. Additionally, the Structures CRI is forecasted to decline due to worsening asset condition through ageing and renewal rate below a sustainable level, expected longer time scales for completion due to access difficulties and increased design requirements, and increased level of deferred renewals.

We are also forecasting achievement of 95% of our 7 key volumes in asset renewals for which we have established our revised renewals delivery approach as outlined in Section 11 below. The CSI forecast is in line with the Final Determination. This will be updated via change control with the ORR later in 2019 to reflect the CP5 actuals and our Delivery Plan submission

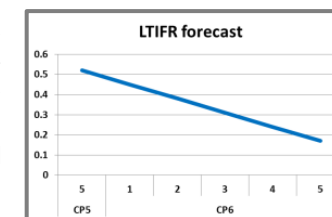
3.3.5. Brilliant service for taxpayers

We have included three financial measures in this section to provide clear definition of our performance as regards actual vs forecast expenditure in Route activities and in enhancements, and in cash compliance. In addition we have a measure to track our achievement of investment milestones over the control period (enhancements, third party schemes etc) and our success in securing external funding.

4. Safety

4.1 Overall approach

Our safety, health and environment objectives are to reduce workforce, passenger and public harm and environmental risks. For workforce safety, our key objective is a reduction in injuries as reflected in our target to reduce our workforce Lost Time Injury Frequency Rate (LTIFR) over CP6 from 0.5 to 0.17. Reducing our LTIFR to 0.17 is a challenging aspiration in an environment that will be busier and in which we will be undertaking more maintenance and refurbishment in shorter white periods. We will achieve this by undertaking a proactive approach to risk management by building on the close call process, upskilling our teams in understanding, identifying and controlling risk in line with the Enterprise Risk Model and underpinned by a consistent assurance framework. We will also continue to mature our Route safety culture and leadership by implementing a behavioural change programme which will increase engagement and drive down harm.



We will achieve a reduction in workforce harm by improving planning, communication, competence and embedding our lessons from the things we do well. We will use technology to reduce the need to go trackside and continue to manage our driving risks, along with analysis tools to predict and prevent. To improve safer trackside working we will also abolish the Victorian means of providing warning with flags as the sole method of protection for our workforce and reduce the risk from on-coming trains.

We will also place a greater emphasis upon our team's health and wellbeing by undertaking a number of initiatives, including better management of mental health, fatigue, addressing respiratory and Hand Arm Vibration risks, providing adequate welfare and developing a caring culture. Improvements to our workforce harm will be undertaken collectively with our workforce and trade union health & safety representatives.

Managing system safety risks to reduce harm to our passengers and members of public will continue to be a priority. We will continue to develop asset management plans for our level crossings estate, continue to risk assess, inspect and maintain existing level crossings, and develop appropriate mitigations where feasible. Station safety, and in particular risks from the platform train interface, will be managed collaboratively with our train operators and will include a range of behavioural and engineering solutions. Route crime including suicides and trespass will also be managed jointly with train operators as well as a wide range of industry partners to implement both technological and educational initiatives.



We plan to develop an Environment Management System (EMS) compliant to the clauses of ISO14001:2015 and move towards an integrated management system. This will be delivered by using a high level structure for Management Systems and use the LNW MSP4NR governance framework. We will also better understand our waste processes and energy usage and look to deliver improvements across the Route.

A new organisational structure is currently being implemented into LNW with the introduction of a Director, Route Health, Safety and Quality. This change along with structural changes below this role, will help elevate the standing of the team, bring in additional resource to drive forward the strategy and will be better aligned to the national organisational structure.

4.2 Safety objectives

As described in our policy deployment approach outlined in Chapter 2 above, we have identified three specific strategic initiatives in safety for CP6. These are:-


- Create an enhanced safety improvement programme - "Everyone Home Safe, Every Day"
- Create an enhanced assurance regime linked to risk management
- Create an Environment & Sustainability Excellence programme

These initiatives will be updated on an annual basis to maintain their relevance and alignment with the overall vision for LNW Route as regards locally driven measures and stakeholder engagement. Copies of our initial action plans for each of the above can be found in Appendix D.

Achieving these strategic initiatives will be measured using the same key measures employed across Network Rail as below:-

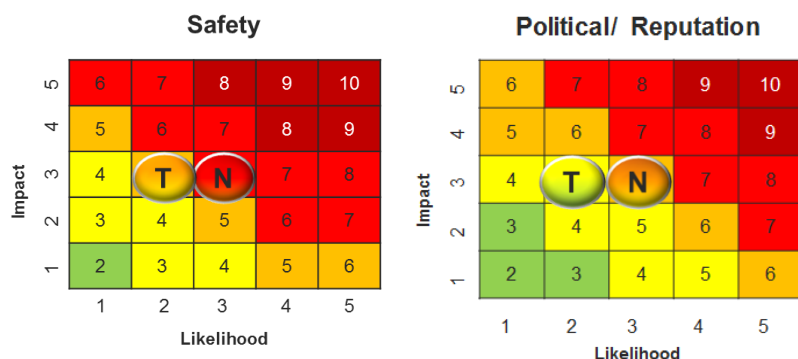
Safety		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Lost Time Injury Frequency Rate (LTIFR)	WORSE THAN TARGET	0.48	0.41	0.34	0.27	0.20	0.17	0.15	
	TARGET	0.45	0.38	0.31	0.24	0.17	0.15	0.13	
	BETTER THAN TARGET	0.43	0.36	0.29	0.22	0.15	0.12	0.12	
Risk management Maturity Model (RM3)	WORSE THAN TARGET	6	6	6	6	6	6	6	
	TARGET	8	8	8	8	8	8	8	
	BETTER THAN TARGET	10	10	10	10	10	10	10	
Train accident risk reduction measures	WORSE THAN TARGET	60%	60%	60%	60%	60%	60%	60%	
	TARGET	80%	80%	80%	80%	80%	80%	80%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Top 10 milestones to reduce level crossing risk	WORSE THAN TARGET	6	6	6	6	6	6	6	
	TARGET	8	8	8	8	8	8	8	
	BETTER THAN TARGET	10	10	10	10	10	10	10	

Key stakeholder priorities	Response
Improve passenger safety	<p>Passenger safety is monitored and measured collaboratively with our customers. Joint safety meetings are held with each lead operator on an 8-weekly or quarterly basis and report into the route Alliance boards.</p> <p>The joint safety meetings are an opportunity for shared risks to be identified and managed via a Joint Safety Improvement Plan (JSIP). JSIPs commonly include improvements for passenger safety at stations, route crime (trespass & suicides) and operational incidents i.e. Signals Passed at Danger (SPADs), wrong routes. In addition to the JSIPs, Level 2 scorecards are also developed for each of our lead operators. These scorecards include a mixture of joint measures including safety, infrastructure and performance items.</p> <p>Passenger safety at our four managed stations is steadily improving and is at the lowest rate it's been in the preceding two years. Birmingham New Street Station still presents challenges with passengers injuries on escalators and stairs. The most common accident types are slip, trip or falls on the platform, concourse, escalators or with a rail vehicle (platform train interface).</p>
Operator staff safety	We recognise the importance of providing and maintaining walkways for train staff at signals, at depots and near stations. We have included investment in these areas in our expenditure plans, particularly in our Off Track assets, and will work with our stakeholders to identify other areas and hazards that affect their staff.
Continue to improve level crossing safety	We have secured specific additional ring fenced funds (see section 4.4.1 below) to continue to address this issue in addition to improvements that we will be delivering through our asset renewals works on active crossing systems and level crossing decks.

KEY	
	= NOW – Current position
	= TARGET – position at end of CP6

4.3 Safety activity prioritisation and risk outcome

No.	Key constraints, risks and opportunities	What we plan to do	Owner	Timescale (start/finish)
1	Opportunity: Reduce the number of accidents resulting in significant harm i.e. specified injuries, lost time accidents and near miss events	Implement the Route SHE strategy, structured around six core areas – Safety leadership, track worker safety including and abolish Victorian lookout warning with flags as the sole means of protection., system safety, risk management & assurance, health & wellbeing Environment	DRHSEQ COO	Now/March 2025
2	Opportunity: Develop a mature safety culture within the Route where SHE is in the hearts and minds of all of our workforce	Undertake culture climate checks to target areas for improvement, through a behavioural improvement programme. Embed existing plans that support a mature, caring safety culture with strong safety leadership for example safety conversations, safety hour, risk awareness, reporting underpinned by a fair culture.	DRHSEQ COO DRAM RDD	Now/March 2025
3	Opportunity: Collate Platform Train Interface (PTI) risk data	Utilise the new RSSB risk assessment tool to assess Platform Train Interface risk at stations on the Route. Engage with operators to identify best practice and joint plans for reduction of risk	DRAM	Now/Dec 2019
4	Risk: CP6 enhancement schemes to address congestion at stations do not proceed as planned	As funding for the CP6 enhancement schemes is confirmed or not we will develop mitigation plans to manage increasing congestion at stations in CP6	System Operator COO	Mar 2019/End of CP6
5	Risk: Earthworks failures impact train operations and passenger safety	Increase earthworks and drainage asset renewals and maintenance and utilise more monitoring to better manage our asset base and reduce the potential number of service affecting failures	DRAM	Dec 2019/End of CP6
6	Risk: Misdirection of proposed level crossing interventions in CP6 such that safety improvements are not maximised	Develop level crossing asset management team to plan and protect the expenditure of CP6 funds on level crossing improvements and closures	DRAM	Now/March 2020
7	Risk: Route crime including fatalities and trespass continue to rise and has a larger societal impact	Continue to develop innovative solutions to reduce the risk, working closely with industry partners, engaging with local communities and developing appropriate approaches	DRHSEQ COO	Now/March 2025
8	Opportunity: Develop an Environment Management System (EMS) in line with ISO14001 and an integrated management system	Delivered by using a high level structure for Management Systems and use of the LNW MSP4NR governance framework. In addition, better understand our waste processes and energy usage to deliver improvements across the Route	DRHSEQ COO DRAM	Now/March 2025



Summary of risk outcome

Safety

Accidents and operational irregularities pose a risk to our and our stakeholder's workforces whilst passenger and public harm is incurred whilst interfacing with the railway

Reputation

We are unable to achieve our objectives due to emerging challenges from traffic growth, asset degradation and cost increases

4.4 Safety strategy



Everyone in LNW Route has a role to play in keeping themselves, their colleagues, passengers and members of the public safe and healthy every day. Our journey is as much about personal responsibility as it is about corporate action. If we are to ensure that everyone indeed goes home safely every day then everyone has both a right and an obligation to be involved in delivering and achieving this vision.

How we feel, what we believe, and how we behave in the Route is critical in reducing harm. A mature culture will not only make us safer, it will enable us to achieve better performance, improve our diversity, make us a more inclusive business, and provide a liberating and enjoyable place to work. We will take a leading role in improving culture, seeking to bring with us our contractors and organisations we work alongside.

The key facets of an inclusive and mature safety culture are:

Being risk-aware – A culture in which we are aware of the risks we face, we encourage open discussions to identify ways of reducing risks and where ‘looking after your colleagues’ is part of great teamwork

Being treated fairly – A culture in which everyone is trusted to work responsibly within clear and simple boundaries, where the consequences of being unsafe are clear and where we support everyone to work safely

Feeling able to report concerns – A culture in which we actively identify and report hazards, unsafe conditions, unsafe acts, close calls, and assets of concern, in a blame free environment

Having the desire to learn – A culture in which we provide and openly seek constructive challenge and feedback, learn from our mistakes and make changes to our business to prevent repeat incidents from occurring

Being free to innovate – A culture in which we are open to different ideas, views and perspectives, where we have the courage to challenge the status quo, and where innovation to make the railway safer is the norm

Feeling included – A culture in which everyone plays their role in delivering a safe environment, where our business processes actively support our safety vision and where we value all opinions on safety

By embedding our behaviours and values in everything we do, we will drive the cultural changes needed to achieve our vision and strategic objectives.

Whilst we will continue with success of ‘Take 5 for Safety’, our key objective for CP6 is to reduce our LTIFR to 0.17 as described in Section 3 above. Our strategy to deliver our safety objectives is based on a six point plan, with 25 initiatives as shown in the diagram below. This was developed with consideration to the industry ‘Leading Health and Safety on Britain’s Railway – A strategy for working together’, coordinated by the Railway Safety and Standards Board (RSSB) and the Network Rail corporate HomeSafe Plan.



The initiatives within the route strategy have been developed on a risk basis in line with the Enterprise Risk Management (ERM) framework and the Corporate Risk Assessment Matrix (CRAM). We also held a number of cross functional workshops jointly with trade union representatives prior to agreement and sign off of the strategy.

Key elements of our CP6 safety strategy include:-

- Workforce safety LTIFR of 0.17 by the end of CP6;
- Abolishing Victorian lookout warning with flags as the sole method of protection;
- Industry leaders in managing mental health;
- Continue to mature our route safety culture and leadership;
- Development of an Integrated Management System (IMS);
- Environment Management System (EMS) compliant to the clauses of ISO14001:2015;
- Level crossing risk reduction programme;
- Route Assurance Framework based on our management systems.

In addition we will incorporate improved track access for our maintenance staff, provide welfare facilities within 20 minutes from every access point linked to general improvements to depots and facilities, realise benefits from the National Home Safe Plan in CP6, and the Electrical Safety Improvement Programme (see section 4.4.1(b) below).

4.4.1 Specific Safety Improvement Schemes

a) Level Crossings

We recognise that level crossings represent one of the principle public safety risks on the railway and we have already moved to improve our focus on them by recognising level crossings as a standalone asset management category in CP6, as opposed to a subset of other more established disciplines, (Signalling, Off Track, etc). This shift will enable enhanced scrutiny of the level crossing estate, promoting Network Rail's strategic aims and furthering level crossing safety. In particular, the change will better balance LNW Route's maintenance of the active level crossing estate with the objective to increase the number of active train detection warning systems on the network at passive level crossings.

This plan not only includes renewals funding targeted at level crossing signalling systems and crossing decks but also an additional £25m ring fenced fund for specific interventions in CP6. The packages of work identified for this ring fenced fund reflect Network Rail's key strategic aims for level crossings and we will be addressing the following prioritised activities in CP6.

- Continued focus on targeted level crossing closures;
- Increased number of active train detection warning systems on the network;
- Prioritised elimination of passive crossings;
- Deployment of technology to supplement and replace whistle boards and

telephones;

- Technology and innovation designed to maximise safety and performance;
- Community safety programme to improve user behaviours.

Although significantly reduced over successive years, the risk at passive footpath and user worked level crossings accounts for over half of the total level crossing risk on the network. In pursuing technology deployments, our plan targets the following:-

- Location of high risk, high line speeds and high traffic volumes;
- Footpath and bridleway crossings with sighting deficiencies and whistle board protection
- User-worked crossings equipped with telephones in long signal sections and/or subject to high signaller workload.

The expenditure of this ring fenced fund will be allocated between provision of overlays at passive crossings and undertaking more closures as detailed below:-

Intervention	Work type	Budget (£m)
Upgrade passive to active crossings	iMSL	5
	oMSL	6
	Meerkat	3.6
Crossing closures	Strategic closures	10
	Opportunity closures as occasions arise	0.4
Total		25

LNW Route's plans for CP6 focus on the installation of modular solutions for level crossings, minimising the disruptive access required for delivery. Much of the work can be delivered during mid-week possessions, smoothing the work bank for Network Rail's delivery teams. Framework contracts are in place for the supply of oMSLs and a similar arrangement will be introduced for Meerkat once available for procurement. Should Meerkat be delayed we will install oMSL solutions instead.

b) Safer Faster Isolations

The Electrical Safety Improvement Programme (ESIP) aims to improve the safety of our procedures for undertaking electrical isolations on our traction power systems and improve productivity by allowing them to be taken safer, smarter and more quickly than at present. LNW Route are great supporters of this programme and will enable it throughout CP6.

Presently, isolating and earthing our traction power systems requires multiple activities and significant time, and some activities have not changed since the systems were commissioned in the 20th Century. The programme will address working practices and increase our compliance with for example the Electricity at Work Regulations 1989, Management of Health and Safety at Work Regulations 1999 and other regulations forming part of the Health and Safety at Work Act 1974, as well as enabling isolations to be taken faster thus increasing available working time within engineering possessions on electrified routes.



Key activities included in the ESIP programme are:-

- Replacement of manual isolation switches with local and remote controllable devices installed in safe locations
- Introduction of earthing devices to remove the need to use earthing and straps
- Updating of our isolation procedures
- Introduction of remote activation of isolation disconnectors and switches
- Introduction of demarcation technology to improve electrical safety when adjacent sections are live
- Improved training and knowledge

The programme is centrally funded and is therefore not included in the expenditure plans detailed in Section 10 of this plan. It commenced in CP5 and on LNW Route this involved the installation of Track Feeder Switches on DC electrified sections which provide shorting of isolated sections. The programme will continue throughout CP6 and it is also intended to address the location and motorisation of existing manual switches on AC electrified lines. LNW Route currently has over 3,000 of these switches and the programme to address them will continue into CP7 and CP8.

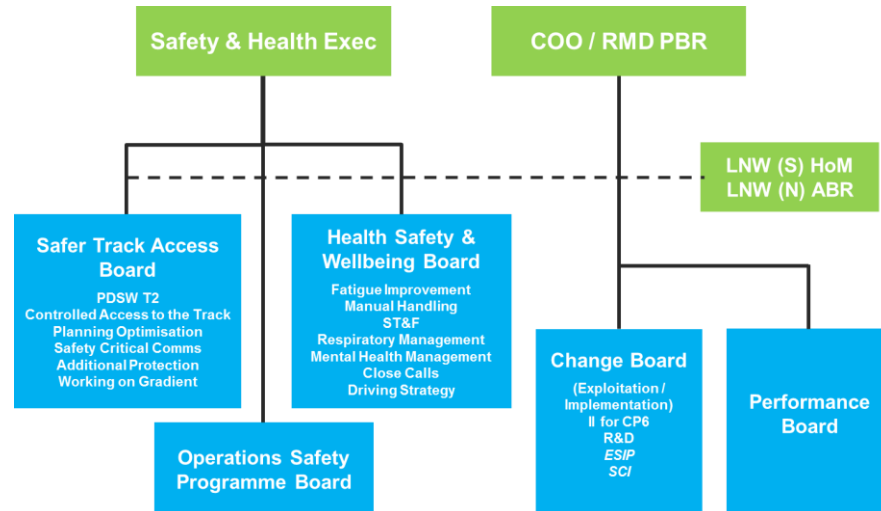
In parallel, the isolation procedure is being updated to the Single Approach to Isolation to increase workforce safety by:-

- Improving identification of electrical hazards and an increased focus on removing or mitigating residual electrical hazards when working on or near traction power systems
- Equipping the workforce to apply the rules by increasing their electrical knowledge and competence
- Reducing the number of exceptions and process irregularities that occur when working on or near traction power systems by having clear processes and better accounting for the operational railway context

Works to be undertaken in CP6 include the installation of 750v DC Track Feeder Switches and 25Kv AC OLE switches with remote securing, training of staff in new procedures, and erection of new signage.

4.5 Safety Governance

The core governance arrangements for the LNW SHE strategy for CP6 are three programme boards: The Safer Track Access Board, the Health, Safety & Wellbeing Board and the Operations Safety Programme Board. These report into the Route SHE Executive, chaired by the LNW Route Managing Director, as shown below:-



These bi-periodic Boards govern both local and national SHEQ projects and programmes. They combine the various national STE related change programmes (Intelligent infrastructure for CP6, Planning & Delivery Safe Work (PDSW), and central planning related programmes) with Route initiatives, so bringing together these elements into a structured portfolio of delivery. The Boards are attended by all functions across LNW, trade union members and national STE representatives as appropriate.

The Safer Track Access Board governs Controlled Access to the Track (predictable infrastructure access married with known workload to drive an optimal roster pattern) and will drive workstreams for additional protection, safety critical communications, PDSW, and other initiatives that link track access to the delivery of our safety strategy.

The Health, Safety & Wellbeing Board governs our fatigue improvement programme, Close Calls management, respiratory management, driving strategy, manual handling and will be focused on our predict and prevent data analysis and looking at embedded e-learning.

The Operations Safety Programme Board governs changes to our operational activities to drive safety improvements including operational strategy, organisation design, briefings and guidance, training and competencies, processes and standards, and benefits reporting.

The Boards hold our route teams to account and give control and assurance to the LNW SHE Executive that we are doing the right things to deliver our CP6 strategy.

LNW Route operates within the framework of the corporate Network Rail Health and Safety Management system, discharging these accountabilities as detailed within the principles of the Matrix Framework and Devolved Businesses (formerly the Devolution Handbook). These processes provide us with a mechanism for the effective control of safety risks as defined in standards, specifications & procedures.

In addition to the corporate ERM framework, we have developed a LNW Risk Management Policy, which outlines the process for managing risk at levels 3 - 5 across our organisation. This enables us to have a bottom up approach to risk management and aligns to the strategic risk Enterprise Risk Records (ERRs) at level 2 and above. A synopsis of our level 2 risks can be found in Appendix E.

The route works collaboratively with its lead customers and have Joint Safety Improvement Plans (JSIPs) in place for each operator. These focus on tackling joint system wide risks, specific to individual needs.



4.6 Compliance and assurance

Our assurance model operates in line with the national approach of '3 lines of defence' and includes the following items:

Level 1 – Management Control

- Maintenance self-assurance, functional managers self-assurance, Planned General Safety Inspections (PGSIs), planned environmental inspections, trade union health and safety inspections & committee meetings, executive safety tours / conversations, PDSW audits, engineering verifications, visualisation centres and Deep Dives.

Level 2 – Corporate oversight

- Independent functional audits (FAP) and deep dives by the national STE audit team.

Level 3 – Independent challenge

- External audits and inspection by the group risk internal audit team and the Office of Rail and Road (ORR).

LNW Route has made some noticeable improvements in reducing the volume of non-compliance which is demonstrable through the gradual reduction in various national and route compliance performance indicators. This includes:-

- 75% reduction in number of expired and rejected Temporary Variations (TVs) since P1 18/19
- 80% reduction in number of overdue defects since P1 18/19
- The last three issued FAP audits for the route rated as Good (Bletchley DU, Stafford DU and Geotech)
- No overdue level 3 internal audit actions

Some of the key process utilised by us to assess compliance and manage our assurance include:-

- Weekly and periodic look ahead of all compliance key performance indicators
- Weekly COO visualisation to discuss key areas of concerns in the route and hold senior management accountable for timely delivery of their actions
- Improvement of engineering processes such as management of temporary non-variance through application of LEAN principles
- Proactive management of risks for all regulatory notices in Network Rail
- Implementation of the CMO system as the primary means to manage maintenance self-assurance, functional managers self-assurance and trials for PGSI and safety conversations

4.7 Security strategy

LNW Route manages significant assets which, when subject to security issues, can have negative impacts to rail performance, costs, reputation and safety, as well as to members of our organisation and those of stakeholders. Areas we aim to address our approach to security include people, railway infrastructure, cyber (technology and information), buildings and property, and equipment and materials.

Our security strategy is to comply with the National Railways Security Programme (NRSP), which is governed by Group Security centrally, but as a route we can work with them to improve our resilience. Some elements are nationally provided or managed such as IT, but within the route we will deliver this using a risk based approach considering the current climate and existing vulnerabilities to deliver enhancements.

- Physical assets and security systems – making our critical locations more resilient through enhancements to the physical infrastructure, CCTV and access control systems
- Operational – implementation of processes and procedures, training and briefing of staff, and delivering annual security exercises

We will work with the Group Security function in developing our approach to support our jointly owned goals of:-

1. Establish and maintain a safe and secure culture
2. Safeguard our people
3. Reduce the impacts of security incidents
4. Establish and develop clear roles and responsibilities for security
5. Establish systems that provide clear and relevant security information to stakeholders

5. One Team

5.1. Overall approach

Our vision is to create a high performing team in LNW Route that works collaboratively across industry boundaries. This will include how we are organised, our culture and our skills.

In line with our policy deployment approach outlined in Chapter 2 above, we have identified specific strategic initiatives for CP6. Those that are applicable to this section are:-

- Create a diverse, caring & inclusive culture underpinned with the right behaviours
- Create an organisational capability and development programme
- Develop the capacity and capability of Works Delivery to ensure delivery of the agreed CP6 capital programme

These initiatives will be updated on an annual basis to maintain their relevance and alignment with the overall vision for LNW Route as regards locally driven measures and stakeholder engagement. Copies of our initial action plans for each of the above can be found in Appendix D.

5.2. One Team objectives

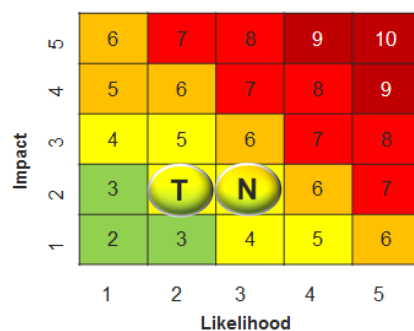
On our Long Term scorecard we have included a section for One Team with the following measures to track our achievements throughout the Control Period.

One Team		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Return of Bands 1 to 4 performance reviews	WORSE THAN TARGET	80%	80%	80%	80%	80%	80%	80%	
	TARGET	90%	90%	90%	90%	90%	90%	90%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Early Engagement: Career Development & Sponsorship	WORSE THAN TARGET	80%	80%	80%	80%	80%	80%	80%	
	TARGET	90%	90%	90%	90%	90%	90%	90%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Everyone E-Learning	WORSE THAN TARGET	80%	80%	80%	80%	80%	80%	80%	
	TARGET	90%	90%	90%	90%	90%	90%	90%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	

5.3. One Team objectives activity prioritisation and risk outcome

No.	Key constraints, risks and opportunities	What we plan to do	Owner	Timescale (start/finish)
1	Opportunity: More transparency and consistency in setting objectives to align with the Route vision	Develop objectives that align with the level 2 and Level 3 X-matrix strategic initiatives and explain their linkage to the overall Route vision	All Route Exec members	By end of 2019
2	Opportunity: Promote cultural shifts in accountability for commercial and customer issues	Following on from cascading safety responsibilities to all staff, use similar approaches to develop a cost conscious and customer focussed culture	RFD COO	Now/End of CP6
3	Opportunity: Use of the apprenticeship levy	Will allow greater focus on attracting and retention of apprentices, and will assist in growing our talent and encouraging development	HoHR	Now/End of CP6
4	Risk: Insufficient applicants to achieve required LNW Works Delivery recruitment needs	Positive recruitment campaign regularly monitored and actions taken when interim targets not achieved	HoHR COO	By 2020
5	Risk: Insufficient female applicants for roles to help increase female participation in our workforce	Raise awareness of our objective to increase participation, actively encourage applications, use gender balanced interview panels, advertise our family friendly working conditions such as flexible working etc	HoHR	By 2020
6	Constraint: Nationally negotiated agreements limit flexibility to change team sizes and roles	Continue to discuss issue with appropriate parties to develop approaches that assist LNW Route with their long term aims	HoHR	Throughout CP6

Political/ Reputation



Summary of risk outcome

We are aiming to develop our workforce to suit the challenges of CP6 within the context of Network Rail as a whole. We already have numerous Route level initiatives to address issues relevant to LNW and will develop these further in CP6. Our team is growing, particularly with additional Works Delivery resources, and our challenge will be to maintain strong morale and a positive, inclusive culture while facing more stringent scrutiny and expectation

5.4. Organisational capability

Our strategy for organisational capability, as described in the LNW Talent Strategy, aims at attracting and managing talent within the Route to improve performance and minimise the short to long term skills gap risks for the business during CP6. The strategy covers three core elements, namely early engagement, emerging talent, and career development which will maximise the return on investment.

a) Early engagement strategy

The early engagement strategy focuses on the ways in which we attract and retain people into LNW Route and encourage those at an early age to consider working within the rail industry. The plan encompasses a number of pipelines as follows, which cover all areas of skill shortages from entry level roles to management grades:-

- University Technical Colleges (UTCs)
- Secondary schools and colleges
- Apprentices
- Graduates
- Year in Industry Graduate Programme

b) Emerging talent

The objective of this strategy is to implement programmes which identify our emerging talent requirements and address our ageing workforce risks in order to fill key talent pipelines and core skill-set gaps. The key areas include:-

- Identification of emerging talent for all key roles
- Section Manager development programme

c) Career Development

Our intention is to unlock, nurture and grow talent within all of our people to maximise engagement and productivity; to develop our future leaders. Activities to support this include:-

- Performance management
- LNW D&I strategy
- Higher Education / Professional Development
- Success criteria for critical roles
- Training Programmes

5.5. Diversity & inclusion

Our overarching objectives for CP6 are:-

- Everyone building a more open, diverse & inclusive organisation
- Feeling included and cared for at work
- The workforce to be representative of the local community

A key output of the above is our ambition to improve the gender diversity of our workforce and raise the proportion of our workforce that are female. One of the contributors to this will be improving welfare facilities for our maintenance teams.



In line with Network Rail's Everyone ABC strategy – Access & Inclusion, Behaviours and Benchmarks, and Collaboration, our three themes are:-

- Leadership, Communication & Direction
- Line Managers – responsibilities / legalities
- Processes & training

The strategy and the initiatives at Route level within this area will be reviewed on a regular basis at the LNW People Executive Review Meetings. Those within maintenance will be developed, reviewed and monitored by our Health, Safety and Wellbeing Programme Board.

6. Brilliant Service for Customers

6.1. Overall approach

Our vision is to deliver excellent customer service in CP6. This will include not only how our organisation works with customers but also with other stakeholders and neighbours. A key part of strengthening our relationships with our immediate customers, our operators, will be to develop proposals jointly with them and agree scorecards on an annual basis that reflect this vision.

In addition to the many meetings that take place in the route regarding specific projects or initiatives, we plan to hold an annual workshop with the collective group of stakeholders to give them opportunity to input into revised priorities and direction for our business plan updates. This will enable the key stakeholder priorities section to be updated on a regular basis to reflect changes that occur.

We have identified specific strategic initiatives for CP6 with regards to our service for customers as follows:-

- Create a programme to deliver excellent customer service
- Programme to deliver Customer CP6 performance trajectories
- Work within ISO44001 (Collaborative Working) framework
- Develop an Integrated Transport Planning Approach
- Communications campaign - internal, industry, lineside neighbours, public

These initiatives will be updated on an annual basis to maintain their relevance and alignment with the overall vision for LNW Route as regards locally driven measures and stakeholder engagement. Copies of our initial action plans for each of the above can be found in Appendix D.

The measures contained within our scorecard have been developed to reflect our key strategies and how we work with our key stakeholders and include national measures as appropriate.

6.2. Objectives

The first two objectives we have included on our Long term Scorecard are the composite performance measures for passenger and freight to facilitate comparisons between Routes over the control period.

Brilliant Service for Customers		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Consistent Route Measure – Passenger (CRM-P)	WORSE THAN TARGET	1.86	1.82	1.80	1.79	1.77	/	/	
	TARGET	1.71	1.62	1.58	1.55	1.52	/	/	
	BETTER THAN TARGET	1.54	1.42	1.36	1.32	1.27	/	/	
Freight Delivery Metric – Route (FDM-R)	WORSE THAN TARGET	93.1%	93.1%	93.1%	93.1%	93.1%	/	/	
	TARGET	94.1%	94.1%	94.1%	94.1%	94.1%	/	/	
	BETTER THAN TARGET	94.6%	94.6%	94.6%	94.6%	94.6%	/	/	

The second half of our scorecard measures in this section includes achievement of the Level 2 scorecards agreed with our key operators, a measure to demonstrate achievement of our transformation initiatives in the North of England, measures identified by other operators which are important to them, and the National Rail Passenger Survey (NRPS) scores for our managed stations.

Brilliant Service for Customers		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Chiltern Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Merseyrail Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Transpennine Express Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Virgin Trains Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
West Midlands Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Northern Level 2 Scorecard Achievement	WORSE THAN TARGET	0%	0%	0%	0%	0%	/	/	
	TARGET	50%	50%	50%	50%	50%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
North of England Transformation Measures	WORSE THAN TARGET	80%	80%	80%	80%	80%	80%	80%	
	TARGET	90%	90%	90%	90%	90%	90%	90%	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	100%	100%	
Cross Country Right Time Arrivals at Birmingham New Street (MAA)	WORSE THAN TARGET	30%	30%	30%	30%	30%	/	/	
	TARGET	37%	37%	37%	37%	37%	/	/	
	BETTER THAN TARGET	44%	44%	44%	44%	44%	/	/	
Arriva Rail London T3 Moving Annual Average (Euston – Watford Service Group)	WORSE THAN TARGET	90.2%	90.2%	90.2%	90.2%	90.2%	/	/	
	TARGET	91.7%	91.7%	91.7%	91.7%	91.7%	/	/	
	BETTER THAN TARGET	92.7%	92.7%	92.7%	92.7%	92.7%	/	/	
Caledonian Sleeper Right Time Arrivals (MAA)	WORSE THAN TARGET	75%	75%	75%	75%	75%	/	/	
	TARGET	80%	80%	80%	80%	80%	/	/	
	BETTER THAN TARGET	85%	85%	85%	85%	85%	/	/	
NRPS Managed Stations Score	WORSE THAN TARGET	81%	80%	81%	80%	81%	/	/	
	TARGET	82%	82%	82%	82%	82%	/	/	
	BETTER THAN TARGET	84%	83%	84%	83%	84%	/	/	

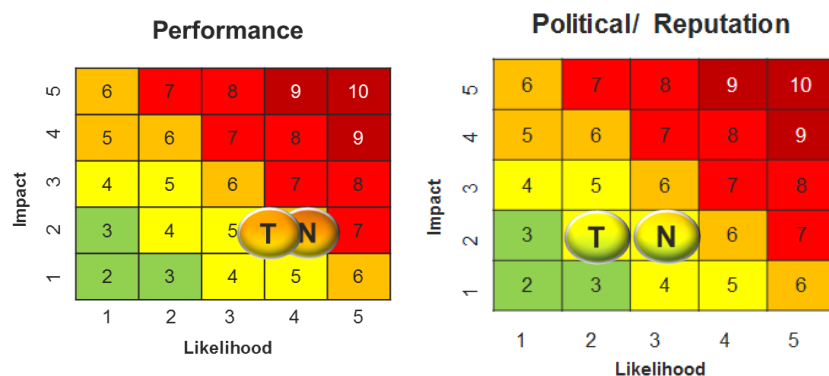
6.3. Key stakeholder priorities

Key stakeholder priorities	Response
Achieve agreed performance targets	Joint performance strategies with each operator to allow appropriate targets to be set and realistic plans to be implemented. Our proposed performance forecasts for CP6 are summarised in section 6.5 below. Links to our strategic initiative 'Programme to deliver Customer CP6 performance trajectories' and the associated Action Plan in Appendix D
Minimise DPI	
Invest in stations	Within this plan, our ability to invest beyond Long Term Charge levels is limited. However, we have increased our minor works and reactive maintenance budgets for stations to better address faults and other issues in CP6. Station improvements are an area of key focus for our strategic initiative 'Grow external investment in LNW (including "Open for Business")'
Improvements with renewals	We are committed to exploring opportunities for improvement and addressing pinchpoints wherever possible in conjunction with our stakeholders. Examples includes Birmingham New Street Resignalling in which we will raise the departure speed from 10mph to 15mph as part of the renewal scheme in CP6 and investigations into the PSR on Knightcote embankment. Other opportunities to allow more pinchpoints to be addressed will be explored as further funding is secured or unused headroom becomes available later in CP6
Reduce journey times	
Address pinchpoints and other non-condition asset issues	
Train planning resources	We are actively supporting the improvement in the System Operator capabilities in this area
Cross Route liaison	We have expanded our access and logistics team to encompass the whole Route and to address cross route and diversionary issues in advance of national access planning timescales. See Section 11.3.1
Availability of diversionary routes	
SISS at stations	By NRT and covered in their plan for CP6. A summary is included in Section 10.3 below
Improved passenger handling during disruption	Building on our experience with our arrangements with HS2, we have included this as an activity in our revised access planning and logistics team activities in CP6
Deliver better stations and Improve network capacity	Our plans for expenditure at stations have been developed in conjunction with the station operators and we will continue to seek additional funding for improvements
Transfer Worcester area to LNW Route to provide better integration with operations in the West Midlands	We are developing plans for the transfer of Worcester area into LNW Route in CP6. See section 6.7 below
Accommodate freight growth	We recognise the importance of LNW Route to the rail freight industry and will seek to balance its requirements along with those of other operators on our Route. We have also included a summary of initiatives relevant to LNW by our sister Route, Freight and National Passenger Operations (FNPO), in Appendix J.

KEY	
	= NOW – Current position
	= TARGET – position at end of CP6

6.4. Locally driven measures prioritisation and risk outcome

No.	Key constraints, risks and opportunities	What we plan to do	Owner	Timescale (start/finish)
1	Opportunity: Refranchises in CP5 and CP6	Engage with DfT and bidders at an early stage and understand what the long term joint strategy should look like for CP6. Three of our six key operators will be refranchised over the next 7 years	COO	Now/End of CP6
2	Opportunity: New train fleets in CP6 will provide greater capacity and better performance	Joint working practices to understand what impact the fleets will have on infrastructure and possible trials for on train monitoring and Digital Railway use. New fleets already confirmed for Merseyrail, West Midlands, Northern and Transpennine Express	COO	Now/End of CP6
3	Opportunity: Closer working with Operators	Further develop measures on new Level 2 scorecards with stakeholders to better reflect their priorities and our performance and work towards conformance with ISO 44001 (Collaborative working)	COO	Now/End of CP6
4	Opportunity: Annual update of performance measures	Opportunity to closely align them with previous year exit points and realistic performance plans jointly developed with operators	COO	Now/Start of CP6
5	Opportunity: Worcester transfer	Transfer of the Worcester area will give the opportunity to improve customer service and our organisation in the Midlands. See section 6.7 below	COO DRAM	During CP6
6	Constraint: Insufficient Enhancement funding to address customer requirements	Current CP6 proposals do not contain any discretionary funding allowance to be able to address customer requirements that require asset interventions. Continue to support proposals for additional funding for these and promote 'Open for Business' initiatives	BDD DRAM	Throughout CP6
7	Risk: Timetable changes impact performance	Work with the System Operator to help ratify proposed timetable changes in advance of timetable changes and ensure they align with the infrastructure capability	COO DRAM	Throughout CP6



Summary of risk outcome

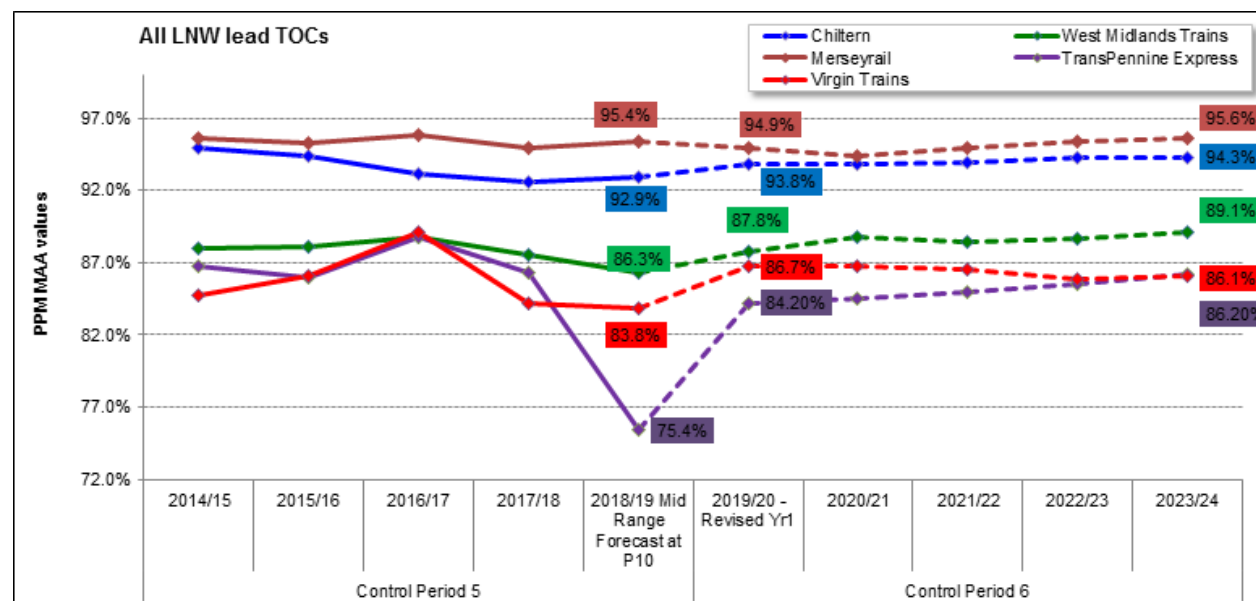
We already have strong relationships with our operators and will continue this in CP6. Challenges include 3 out of our 6 key TOCs experiencing a refranchise, new train fleets arriving, and growth continuing. We will work with current and future operators to tackle these challenges together and that stakeholder issues we are currently identifying are progressed wherever feasible

6.5. Operational Performance strategy

Our approach to developing performance trajectories for our lead operators across CP6 has been a balance between realism and ambition. We have used an iterative process based on data, knowledge, experience, and judgement. We used current and recent performance trends as a starting point, identified risks and opportunities over the next six or so years and employed a transparent quantification of them to develop the future trajectories.

In our stakeholder events and detailed engagement meetings over the last twelve months, we have explained our approach to defining our performance trajectories and have had useful dialogue about them being achievable and realistic. We have held performance workshops with each of our lead operators to identify further opportunities and ideas and captured these in Joint Performance Strategies. As these progress further, we will develop alternative trajectories but would intend for these to be stretch trajectories rather than agreeing any formal increases in our targets. In each strategy document, we have stressed that we will continue to follow an annual target setting process.

Our forecast performance trajectories for CP6 are as shown below. These have been adjusted to reflect the latest view on recovery from the position reached after the timetable change in May 2018 and subsequent alterations later in the year.



We have compared our proposed trajectories with our operator's aspirations, and have been reviewing the gaps where appropriate and what could be done to achieve closer or actual alignment with them. Both Merseyrail and Chiltern Railways have agreed with our proposed trajectories as illustrated. For our four three remaining lead operators where we have a gap between our forecast trajectory of what we consider our infrastructure and their known activities can sustain compared to their aspirations or franchise obligations, we have captured the issues in the Joint Performance Strategies. These include a section describing the gap along with considerations on how it might be addressed.

We will regularly review the supporting evidence behind our performance forecasts to validate or adjust them and will update the Joint Performance Strategies on an annual basis. Performance targets will be formally agreed with operators on an annual basis as part of the joint Level 2 scorecard process.

6.6. Capacity and timetabling strategy

6.6.1. System Operator

The System Operator (SO) is the function within Network Rail that is responsible for the creation, planning and allocation of capacity to run trains on the network. It is a central function that interfaces with ourselves and supports the delivery of long term strategic plans, timetables and sale of access rights. Further detail of the System Operator activities can be found in their Strategic Plan for CP6.



Train entering platform 4 at Manchester Airport station. This was additional capacity provided under the Northern Hub programme

6.6.2. Capacity and timetabling

LNW Route faces considerable and increasing demands. Linking people and goods to markets from London to Birmingham, Manchester and Liverpool to Scotland, and connecting towns and cities across the South East, Midlands and North West, LNW Route is the backbone of Britain and is fundamental to the country's economic and social fabric and success.

With continued growth in CP6, we will need to address congestion, improve performance and provide more and better journeys for passengers and freight users. Much of LNW Route is operating at or near passenger train capacity and further interventions are required to keep pace with passenger and freight demands.

In particular, on the West Coast Main Line, there is a clear need for the capacity that HS2 will deliver. However, that comes with the added challenge of continuing to operate the existing classic main line, supporting growing passenger numbers, and sustaining performance improvements during the construction of HS2 on and around LNW Route in CP6 at locations such as Euston, Handsacre Junction (near Lichfield), on the Water Orton Corridor and at Crewe.

Elsewhere, capacity challenges include growth on Chiltern services to London Marylebone and serving commuters travelling to Manchester, Liverpool and Birmingham. Passenger capacity and circulation is already constrained at important stations on our route, including London Euston, Liverpool Central and Preston; University, Snow Hill and Moor Street in Birmingham; and Milton Keynes Central.

New franchises will continue to provide opportunities to enhance the customer experience and are central to the industry's plans for supporting growth. LNW Route faces greater franchise-driven change in CP6 than any other route, and will need to work with the incoming franchisees for the West Coast Partnership, CrossCountry and Chiltern Railways, amongst others, on plans for service changes, longer trains, new fleets, new stations, depots and stabling.

The System Operator team, working with the industry and funding bodies, will be leading a new more responsive approach to strategic planning in CP6. Continuous Modular Strategic Planning will address targeted strategic questions, which will be prioritised to inform investment decisions and input in to future rail franchises. This is described in more detail in the System Operator's Strategic plan for CP6.

6.6.3. Future capacity and growth

Our System Operator colleagues work with the industry and stakeholders on the Long Term Planning Process to forecast demand and plan the capacity required over a 30 year horizon. This includes identifying and obtaining development funding for enhancement projects, before developing these through the early stages of GRIP. Beyond meeting demand on trains and in stations in CP6, our strategy is to work collaboratively with funders and the System Operator to develop strategic enhancement programmes that will deliver long-term economic benefits.

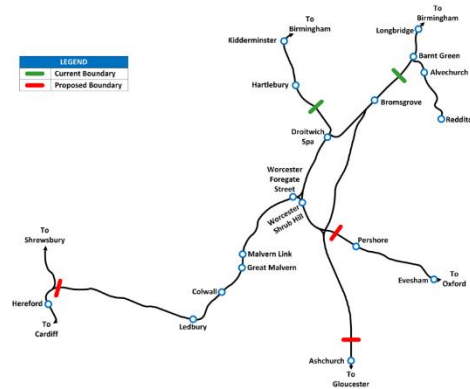
This includes working closely with the emerging Sub-National Transport Bodies of Midlands Connect, Transport for the North and England's Economic Heartland, Local Enterprise Partnerships, and other third-party funders. This includes collaboration on programmes clearly aligned to the industry's long term strategic plans, national infrastructure and industrial strategies, and leveraging the benefits of HS2. These programmes include:-

- East West Rail Phase 2
- Transpennine Route Upgrade
- Midlands Rail Hub and Midlands rail corridor enhancements
- Birmingham Airport connectivity
- Chilterns connectivity to Old Oak Common
- Northern Powerhouse Rail
- Cumbrian Coast Line enhancements

We will seek to align future renewals plans with strategic enhancements, and take on development and delivery of schemes as appropriate once outputs are defined and funding is secured.

6.7. Worcester Transfer

We are currently assessing the benefits and business case of transferring the existing Worcester area in Western Route to LNW Route. The transfer has the strong support of the two Train Operators (GWR and West Midlands Trains), Worcestershire County Council and the Local Enterprise Partnership. The transfer is anticipated to deliver the following benefits:-



- Operationally, it aligns the route boundary on the NE-SW main line better with the West Midlands resignalled area, which since November 2016 has controlled the area to the proposed boundary at Eckington, but under a temporary 'hybrid' of operational and maintenance arrangements
- There is strong TOC support for the move, particularly GWR and West Midlands Trains. West Midlands Trains will benefit from liaison with a single Network Rail route for their Birmingham-Worcester-Hereford services
- It is supported politically by Midlands Connect, the West Midlands Rail Executive, and by Worcestershire County Council, who advocate improved transport links in the Worcestershire to West Midlands axis
- The boundary change would enable development of a resignalling strategy for the Worcester area, with space allocated in the West Midlands Signalling Centre, and the opportunity to resignal the route as an entity, bringing capacity and reliability benefits

The transfer is envisaged to cover all operations, maintenance and renewals activities in the area. Because of existing Western Route renewals and other contracts and shared management with other areas in Western Route, any transfer will need to be staged to suit the transfer of knowledge, supply chain and other arrangements.

LNW already undertake management and renewal of buildings assets within the area and management of other assets would become the responsibility of LNW Route as asset knowledge and renewal plans are transferred. This would involve LNW Route adopting current workbanks and supply chain arrangements and gradually merging them with their approach elsewhere on the Route.

Plans for migration of operations, asset management and maintenance teams are being developed, along with appropriate restructuring to ensure suitable management arrangements are formed and the transfer delivers the expected benefits.

6.8. Commonwealth Games, Birmingham 2022



The Commonwealth Games will be held in Birmingham in 2022. The primary venue for the ceremonies and major events will be the Alexander Stadium near Perry Barr station. Events will also take place at other venues across the region including the NEC, Birmingham University, Coventry Arena and Villa Park.

The games will be staged from 27th July to 7th August 2022 and during this period it is anticipated that potentially half a million spectators will travel from the West Midlands and beyond to the venues.

With a projected 50% of spectators expected to travel by train, performance of the rail and integrated transport network will have a significant bearing on the success of the Games and how positively they are viewed. This level of travel to and from the Commonwealth Games venues will challenge the railway network in Birmingham and beyond. Reconstruction of Perry Barr station has already been identified as a priority and lessons learnt from the Olympics in 2012 and the Commonwealth Games in Glasgow in 2014 will be incorporated into our preparations.

As for Glasgow 2014, we will develop a delivery plan to outline the additional measures we will take to co-ordinate Games readiness which will include a programme of activities, primarily focussing on asset resilience, response times to incidents, appearance of the railway and how we maintain a customer focus throughout, and assess the risks to their achievement and the smooth operation of the network during the period of the games. Progress against our plans will be regularly reviewed and updates will be provided to key internal and external stakeholders.

7. Sustainability & asset management capability

7.1. Overall approach

Within sustainability and asset management, our vision is to adopt and embed a structured continuous improvement approach to developing and delivering our Enhancement, Renewals and Maintenance Asset Management Plans to provide a safe and reliable railway. This will be managed through the LNW DRAM organisation via regular reviews and progress monitoring. We will update our expenditure plans as part of the continuous business planning approach in CP6 and engage with stakeholders, both internal and external, to help shape our priorities and initiatives.

Consistent with our policy deployment approach outlined in Chapter 2 above, we have identified three specific strategic initiatives for CP6 in this area. These are:-

- Seek ISO55001 (Asset Management Standard) certification
- Develop & implement Supply Chain improvement programme
- Adopt & extend Structured Continuous Improvement - "Better Every Day"

These initiatives will be updated on an annual basis to maintain their relevance and alignment with the overall vision for LNW Route. Copies of our action plans for each of the above can be found in Appendix D.

7.2. Sustainability & asset management capability objectives

We have included the same measures on our Long Term Scorecard as all other Routes:-

Sustainability and Asset Management Capability		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Reduction in Service Affecting Failures (SAF)	WORSE THAN TARGET	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	/	/	
	TARGET	1.0%	1.0%	1.0%	1.0%	1.0%	/	/	
	BETTER THAN TARGET	1.5%	1.5%	1.5%	1.5%	1.5%	/	/	
Composite Reliability Index (CRI)	WORSE THAN TARGET	-3.7%	-2.1%	-0.7%	0.8%	2.1%	/	/	
	TARGET	-1.1%	0.5%	1.9%	3.4%	4.7%	/	/	
	BETTER THAN TARGET	-0.7%	0.9%	2.3%	3.8%	5.1%	/	/	
Renewals - 7 key volumes	WORSE THAN TARGET	90%	90%	90%	90%	90%	/	/	
	TARGET	95%	95%	95%	95%	95%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Composite Sustainability Index (CSI)	WORSE THAN TARGET	/	/	/	/	/	/	/	
	TARGET	/	/	/	/	-3.5%	/	/	
	BETTER THAN TARGET	/	/	/	/	/	/	/	

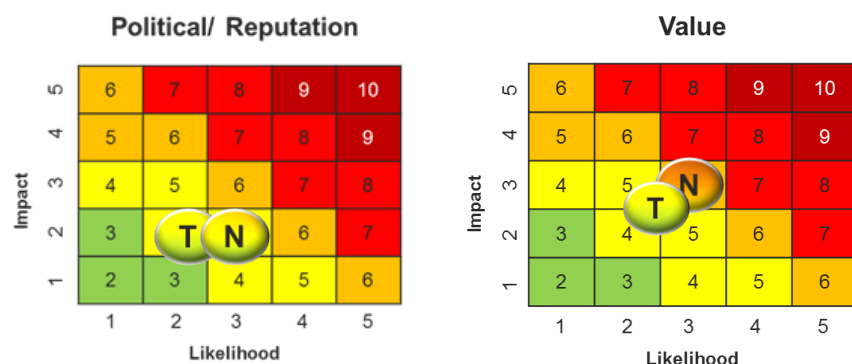
NB The CSI forecast is in line with the Final Determination. This will be updated via change control with the ORR in 2019 to reflect the CP5 actuals and our Delivery Plan submission

Key stakeholder priorities	Response
Deliver capacity improvements to time and budget	Enhancements will be addressed within the CP6 Enhancements Delivery Plan but LNW Route will support their delivery through integrated access, consistent engineering approaches and provision of resource as required
Incorporate improvements with renewals	Opportunities for improvement, removal of PSRs and addressing pinchpoints will be explored wherever possible in conjunction with our stakeholders. An example includes Birmingham New Street Resignalling in which we will raise the departure speed from 10mph to 15mph as part of the renewal scheme in CP6.
Invest in stations	Within this plan, our ability to invest beyond Long Term Charge levels is limited. However, we have increased our minor works and reactive maintenance budgets for stations to better address faults and other issues in CP6. Station improvements are an area of key focus for our strategic initiative 'Grow external investment in LNW (including "Open for Business")'
Reduce journey times e.g. PSR removal	We will continue with our current initiatives into CP6 to challenge existing PSRs and, where possible, remove them to improve journey times
Replace Chiltern ATP	This has been included in our proposals - see Section 7.10
Improved passenger handling during disruption	Building on our HALO access planning arrangements with HS2, we are extending this approach to cover all of LNW in CP6. This will then allow passenger handling, diversionary routes etc to be addressed in a consistent manner for all disruptive access requests. See Section 11.3.1
Cross Route liaison	
Availability of diversionary routes	
SIS at stations	By NRT and covered in their plan for CP6. A summary is included in Section 7.4 below

7.3. Sustainability & asset management capability activity prioritisation



KEY	
	= NOW – Current position
	= TARGET – position at end of CP6



No.	Key constraints, risks and opportunities	What we plan to do	Owner	Timescale (start/finish)
1	Opportunity: Implementation of Risk Based Maintenance regimes	RBM will help us to make a step change in the way we manage asset reliability and asset whole life cost and allow us to safely maximise asset usage for minimum intervention. This means moving from time based fix and find regimes to intelligent proactive functional based regimes.	DRAM, COO	Ongoing implementation and review
2	Risk: Preparedness to deliver the CP6 renewal volumes	We are implementing a 'Supply Chain Improvement Programme' which will enable our deliverers to be sighted and informed on the detail of our committed workbanks for the entire control period. We will also track key requirements such as remits, access, resources, etc to provide assurance that all the prerequisite artefacts are in place to enable our delivery agents to operate efficiently.	DRAM	Ongoing implementation into early CP6
3	Opportunity: Understanding the gap to ISO 55000 conformance and plan to close	We have used the National AMEM assessment report to assist in identifying the areas of focus required to achieve ISO55000 certification. Our action plan will close the identified gaps in conformance to the international standard and deliver an improved asset management system.	DRAM	Ongoing implementation throughout CP6
4	Opportunity: Intelligent Infrastructure programme for CP6	The CP6 Intelligent Infrastructure programme deliverables should help to achieve wider asset management objectives and the performance related route scorecard measures which underpin a safe and reliable right-time railway.	DRAM, COO	Ongoing implementation throughout CP6
5	Risk: Integrated delivery, risk, change control and reporting under an improved operating model and continuous business planning	LNW Route has a complex portfolio of works including major third party enhancements such as HS2 and Northern Powerhouse Rail. If not managed effectively the scale of work has the potential to cause disruption to Route operations. We are upgrading our management approaches to the collation, integration, control and communication of information from across enhancement, renewal and third party activity in order to provide support to their overall delivery.	DRAM	Ongoing implementation throughout CP6



**Summary of risk outcome**




Failure to achieve a predict and prevent maintenance strategy with integrated cross functional multi-disciplinary delivery plans. Unable to maximise the whole life cost of assets through implementation of an effective and mature asset management approach

7.4. Asset by asset key outputs

Asset area	Key outputs
Cross-asset prioritisation and maintenance / renewals balance	We have developed our renewals expenditure proposals based on assessment of the risk levels within each asset and the long term trends identified through STE modelling. We have compared previous expenditure to outputs achieved, the ability of our supply chain to deliver, and areas that have been historically underfunded. Our proposals for CP6 are therefore a combination of information based assessments with engineering judgement to derive the budgets for each asset. Our asset based operational expenditure plans have been built bottom up using the Activity Based Planning methodology incorporating required volumes to align with planned renewals programmes. This has allowed for an accurate forecast of the maintenance costs throughout CP6 that are required to deliver the required outputs and for a balance between our maintenance activity and our renewals works. Summaries of our strategies in each asset can be found in Appendix G.
Track 	<p>a) Improve LTIFR Our focus is on reducing the need for staff to go on track, which will be achieved by increased use of desktop data and aerial surveys, as well as continuing to support the increased use of train-borne inspection methods. All deliverers also have their own LTIFR reduction plans</p> <p>b) Improve train performance (PPM) and reduce SAF Service affecting failures due to track faults are forecast to increase by approximately 2% by the end of CP6. We have increased our maintenance activity to mitigate the impact of this and support our SAF reduction objective</p> <p>c) Improve CRI CRI is forecast to decline during CP6 based solely on funded renewal intervention levels. This will be mitigated by upgraded monitoring and maintenance regimes</p> <p>d) Improve weather resilience Renewals and refurbishment plans have been developed to reduce the risk of CRT related issues at the long term planning stage</p> <p>e) Balance between maintenance and renewals Maintenance volumes and expenditure are planned to be increased by 6% in CP6 to partially mitigate the lower renewals spend. In the Track Asset, LNW has the largest amount of plain line track nationally operating under an RBM regime. In parallel with completing the implementation on plain line CWR, we are now commencing implementation on S&C. This will facilitate achieving maximum value from our assets in terms of optimised maintenance and renewal strategies and improved asset reliability</p>
Signalling 	<p>a) Improve LTIFR Signalling renewals will contribute to this goal by implementing “safe by design” principles during design of assets in re-signalled areas. Continued implementation of RBM in CP6 is expected to reduce the frequency of some maintenance tasks reducing the workforce exposure to risk</p> <p>b) Reduce SAF Signalling renewals will contribute to train performance and a reduction in SAF by providing new equipment with improved reliability and diagnostic facilities to assist in fault diagnosis Better data analysis will allow targeted minor works interventions to improve asset reliability</p> <p>c) Reduce train accident risk Signalling renewals will continue to improve safety by reducing the likelihood of failures leading to degraded mode working, targeting poorly performing assets e.g. multi-SPAD signals and improving train protection systems to current standards</p>

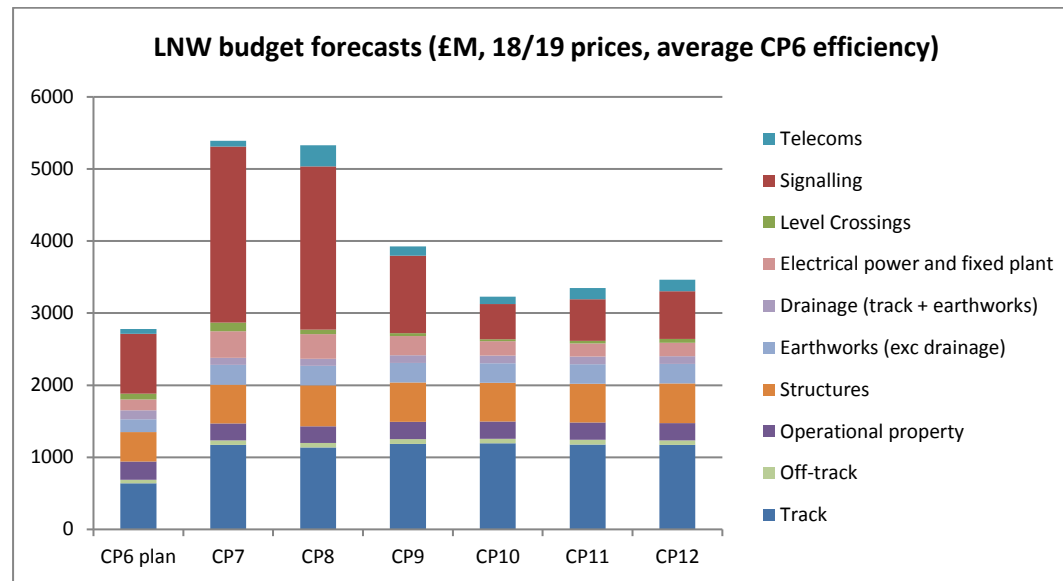
Level Crossings 	<p>a) Improve LTIFR The adoption and rollout of modular overlay level crossing systems will minimise the on-site maintenance burden of LNWS “passive to active” level crossing upgrades, thereby reducing the opportunity for lost time injuries</p> <p>b) Improve train performance (PPM) The introduction of active warning systems across the Route’s passive level crossing estate will enable the removal of temporary speed restrictions that were imposed to mitigate sighting distance deficiencies</p> <p>c) Reduce train accident risk Upgrade of public road level crossings to accommodate the latest safety equipment, including obstacle detection technology in place of automatic half barriers, will provide the best possible protection against train accident risk and derailment. Closure of User Worked Crossings will completely eliminate the interface between road/farm vehicles and trains at those crossings, whilst elsewhere the installation of oMSL and iMSL will mitigate the risk of signaller or crossing user errors that might result in a train accident</p>
Structures 	<p>a) Improve LTIFR Compliance with Working at Height Health and Safety legislation. Prioritise and install handrailing to any remaining Higher Risk or Medium Risk sites identified through the examination process, by the end of CP6. Manage the condition and legal compliance of existing handrails to remain fit for purpose through the process of examination recommendations and work item management</p> <p>b) Improve train performance (PPM) We will actively intervene to prevent number of TSRs / ESRs due to structures issues increasing in CP6, and where possible reduce them whilst maintaining safety</p> <p>c) Reduce SAF Improved asset information and asset management processes facilitated through the rollout of the Civils Strategic Asset Management System (CSAM). Development of staff to provide evaluative capability appropriate for the portfolio of assets and threats to assets being managed. Continued progression of Bridge Strike initiatives to improve visibility and signage. Ongoing support from STE to engage with Local Authorities, Road Hauliers and other stakeholders. Addressing Road Vehicle Incursion (RVI) high risk sites to mitigate threat to the railway associated with RVI and inclusion of scour Level 1 sites within renewals plan</p> <p>d) Improve CRI Improved asset information and asset management processes facilitated through the rollout of CSAMs. Development of staff to provide evaluative capability appropriate for the portfolio of assets and threats to assets being managed. Increased minor works spend in CP6 will optimise usage of in-house delivery mechanism to maintain the asset in a safe and functional condition by addressing prioritised defects (risk score of ≥ 12) identified through the examination process. This approach is supported by the significant progress in CP5 to reduce the number of open defects (Risk Score > 12)</p> <p>e) Reduce train accident risk All current known Scour Level 1 sites included in the plan. Mitigation of Road Vehicle Incursion (RVI) high risk sites will be achieved through developing standard design details and improved stakeholder engagement. Emerging sites for both activities will be prioritised accordingly</p>

<p>Earthworks</p> 	<p>a) Improve LTIFR Ensure that all new earthwork schemes install appropriate safe access and compliant cesses as well as edge protection (where identified that there is a risk from falling) in accordance with the Working at Height Regulations</p> <p>b) Improve train performance (PPM) Remediation of a number of embankment sites on the WCML and Chiltern lines that have persistent “rough ride” reports and ESR/TSR locations due to the underlying nature of the geology</p> <p>c) Reduce SAF In order to better address the impacts of future adverse or extreme weather, we will co-ordinate with other asset teams, particularly Drainage & Off Track, to jointly identify and treat high risk locations to reduce the likelihood of future earthwork failures causing disruption to services</p> <p>d) Improve CRI Better use of asset information and asset management processes facilitated through the rollout of the Civils Strategic Asset Management System (CSAMs) will allow the focus to shift towards a “total system” approach to the management of the network and it’s civils assets</p> <p>e) Reduce train accident risk Remote Condition Monitoring/Alarm systems (subject to the technology being available) will be employed across the route in the latter years of the Control Period at sites where there is an increased risk of failure during adverse/extreme weather</p> <p>f) Improve weather resilience Earthwork schemes to have appropriate drainage associated with them to increase asset reliability during extreme weather events</p> <p>g) Balance between maintenance, refurbishment and renewals The mixture of work types across the portfolio are designed to maximise the volume of the earthwork asset remedied during CP6. This is being led by adopting a “total risk” approach whereby the bulk of the CP6 workbank will involve work being undertaken on a large number soil and rock cutting slopes to reduce the overall risk to the network rather than concentrating on fewer sites that individually may have a greater risk profile</p>
<p>Buildings</p> 	<p>a) Improve LTIFR Address slips, trips and falls issues at stations and depots, and improve passenger-train interface areas to reduce risk areas Develop specific initiatives as required in conjunction with the Station and Depot Facility Operators and from working more closely with the LNW Safety Team</p> <p>b) Improve train performance (PPM) Ensuring all critical assets are prioritised within the planning phases</p> <p>c) Improve CRI We will employ our Decision Support Tools to target ‘at risk’ assets, and focus on delivery against fault response times</p> <p>d) Reduce train accident risk Ensuring all critical assets are prioritised within the planning phases and that all footbridges and platforms are inspected annually</p> <p>e) Improve weather resilience Implementation of weather alerts for high winds and ensuring vulnerable assets are known with response teams nearby to support</p>

<p>E&P</p> 	<p>a) Improve LTIFR We have a strong focus on access and egress when renewing E&P assets and have specific safety requirements to reduce the need for manual handling</p> <p>b) Improve CRI We will use enhanced monitoring systems on signalling power systems, install fixed pantograph monitoring and 'in service' dynamic OLE monitoring to predict potential failures. We are currently undertaking a number of continuous improvement projects (OLE fault mapping, high speed coasting and review of wind driven ESRs) which will be rolled out to a wider area in CP6.</p> <p>c) Reduce train accident risk We will be removing a number of redundant lighting and OLE structures and renewing some damaged OLE structures in CP6</p> <p>d) Improve weather resilience We will be making further improvements to our water pumping systems in the Merseyrail underground network and renewing other systems in the Manchester and London Euston area. We are also planning to roll out changes to the blanket emergency speed restrictions applied during high winds where appropriate</p> <p>e) Balance between maintenance and renewals Maintenance volumes and expenditure have been increased in CP6 to partially mitigate the lower renewals spend and includes allowances for enhanced monitoring, % reactive replacement or provision of additional spares</p>
<p>Drainage & Off Track</p> 	<p>a) Improve LTIFR We have included schemes to upgrade the safe cess walkways and access points on the route. These activities are designed to support the objective to reduce our LTIFR by mitigating and reducing slips, trips and falls</p> <p>b) Improve train performance (PPM) Increased vegetation removal and maintenance will assist in improving sighting and rail adhesion</p> <p>c) Reduce train accident risk Increased vegetation removal and maintenance will reduce likelihood of signals passed at danger and improve sighting distances for our staff and at crossings for users</p> <p>d) Improve weather resilience Drainage renewals and maintenance activities have been prioritised to improve weather resilience. We will also continue to collect drainage asset data to better understand the resilience of our drainage systems and their weak points so they can be targeted in the future</p> <p>e) Balance between maintenance and renewals In CP6, we have identified vegetation and drainage maintenance tasks for our maintenance organisations to better manage both areas once initial clearance or renewals works have been undertaken</p>
<p>Asset data</p> 	<p>Asset Data Quality Improvements in our core asset data quality through a fully resourced Route Asset Data team and adoption of new tools and updated processes. Asset data linking and local improvement initiatives will be progressed to correct existing data anomalies.</p> <p>Data Specification A robust methodology of assessing our core asset data quality will be developed utilising the 'Minimum Asset Data Requirements' specification that will set the baseline for the structured asset information Network Rail requires to maintain and manage an asset throughout its lifecycle.</p> <p>Asset Data Governance We will embed the Exchange of Asset Information tool and process to facilitate 'right first time' asset data in our systems. Robust linking of core asset data attributes between our registers and systems will be embedded and regularly monitored to maintain alignment.</p>

Summary asset strategy statements giving more detail of our approach to renewals and other interventions in each asset can be found in Appendix G.

7.5. Long run forecast



- This graph describes the long term expenditure forecast to Control Period 12, assuming expenditure levels for CP6 are consistent with the levels outlined in this plan.
- Beyond the end of CP6, the assumed level of investment is that to retain the character (condition and performance) of the asset at CP6 levels.
- Individual asset condition and output long term trajectories for this long term level of spend can be found in Appendix H.

Expenditure and implications	Mitigations
<ul style="list-style-type: none"> • Proposed funding levels in CP6 have driven a reduction in renewals of track and S&C whilst increasing the amount of refurbishment activity to sustain the asset. This aligns with policy, will deliver short term reliability requirements but will lead to an impact of long term sustainability in CP7 and beyond, without a marked increase in funding. This may impact on national resources such as high output trains and signalling testing. Roll out of Digital Railway (DR) will have an adverse effect in the track asset, as capacity increases will impact on service life of the asset. This impact is still to be understood and modelled • Signalling bow wave of funding requirements continues through CP7 and CP8 as we look to move towards traffic management and other DR elements, competing against increasing asset obsolescence in the north of the Route. Deliverability is a concern with the sheer volume of signalling, however DR delivers less physical ground works which may reduce on site requirements. • With E&P asset policy changes and current funding levels, there will be a future bow wave of E&P renewals. Strategies to be developed in mitigation (see opposite) • Buildings remain static for the foreseeable future with key interventions planned to enable a consistent approach to asset remaining life • Increased structures examinations costs will be required to mitigate poor asset condition as a result of a greater need for monitoring. Performance restrictions to mitigate residual safety risks will impact on Schedule 4 costs 	<ul style="list-style-type: none"> • Increased train borne inspections will be required to offset tonnage increase facilitated by DR interventions. Improved designs of S&C components will improve asset reliability, but development is required to allow sustainable reballasting of concrete S&C layouts that can be delivered in short access opportunities. Full implementation of RBM will enable predict and prevent approaches to maintenance, improving reliability and lowering the whole life cost of the asset with right first time repairs • Signalling obsolescence is still a key risk on low priority routes where DR implementation is in the far distance. We are looking at strategic spares management and discussions with specialist companies to maintain competence. Renewals volumes for signalling in CP7 will be at record levels so a key driver for CP6 is to understand how we deliver this workload. • In E&P, the drive to utilise more technology for fault finding and prediction work will improve performance risk, but not necessarily drive down renewals volumes • Improved asset management capability and systems will allow structures to be managed safely to their safety limit

7.6. Sustainable Development strategy

On LNW Route we understand the importance of linking business strategy to societal needs and achieving large-scale social and environmental benefit. LNW have a part to play in achieving the United National Sustainability Goals and consider that our business strategy will positively contribute to the following key goals:-



Nationally LNW will be guided by the Network Rail Responsible Railway Plan, along with our Asset Management Policy, and the Environment and Social Performance Policy.

In line with the 2018 Asset Management Policy we will ensure that everything we build, manage, service or develop leaves a lasting positive legacy for future generations, helping to achieve our vision of a railway fit for the future.



At a business unit level LNW Route will deliver against the central plans and policies through our Environment and Sustainability Excellence Programme. This programme will focus on energy and carbon reduction, biodiversity preservation, pollution prevention, resource management, creating social value and building weather and climate change resilience across the network.

a) Energy and Carbon Reduction

Our programme will include improved energy management through implementation of an Energy Management System aligned to the clauses of ISO55001. We will build on our planned 11.2% reduction in CO2 in CP5 to target a 25% reduction in carbon emissions by the end of CP6. This will be achieved through a range of targeted actions such as considering whole life costs as part of our procurement process and making carbon reduction measures part of the Investment Paper process. We will continue to challenge and reduce our energy consumption across the LNW estate, whilst upgrading our technologies to allow for automated and accurate meter readings. Finally, we will make upgrades to our buildings and yards with suitable energy saving technologies and endeavour to create a set of Carbon Neutral Stations on LNW Route.

b) Biodiversity Preservation

In CP6 we will pay more attention to managing our land to balance safety and ecological requirements. We will strive to achieve no net loss in biodiversity as part of vegetation management works through proactively seeking opportunities to improve biodiversity on railway land.

c) Pollution Prevention

In CP6 we will formalise our commitment to manage risks to the environment through an Environment Management System aligned to ISO14001:2015

d) Resource Management

We will continue manage our waste to optimise recycling and achieve zero waste to landfill. And in addition, we will seek opportunities towards circular economy and undertake responsible sourcing and procurement of raw materials to ensure sustainability in our supply chain

e) Creating Social Value

In CP6 LNW Route will create social value through design to connect communities and jobs. We will endeavour to provide a railway that is accessible to all and encourage colleague community contributions through charitable leave. We will provide greater consideration to the wellbeing of our lineside neighbours and local communities by providing full prenotification for upcoming works, working professionally and reducing works related nuisance, and preservation of local heritage and natural capital considered to be of wider societal benefit. We will continue to work closely with our surrounding communities on rail safety, as described in Chapter 4 above.

f) Weather and Climate Change Resilience

We will continue to improve the weather resilience and sustainability of our assets in CP6. We will seek to improve our ability to predict weather related events by enhanced risk assessments, remote monitoring and improved weather forecasting combined with a better understanding of the condition of our assets. Every renewal scheme we undertake in CP6 will build more resilience into the network by virtue of it being designed to modern standards. We will also explore the development of proactive renewal requirements to consider extreme weather events such as equipment specification and positioning, but our base plan does not include an allowance for addressing the impacts of extreme weather events.



Flood resilience works at Caldew Junction, Carlisle

Our increased focus on drainage and the risk from third party land will start to have a positive effect on both asset sustainability and reliability. We expect to see a reduction in the likelihood of safety critical incidents and the impact of weather related delays in CP6 arising from our improving drainage asset knowledge and a continuing focus on vegetation management. We have included additional earthworks renewals in our renewals plans specifically to address known adverse weather sites and included scour and flood protection works in our structures workbanks.

We plan to develop an LNW Route Extreme Weather Strategy in CP6 which will encompass the following elements:-

- Specification for weather forecasting and trigger levels
- Risk mitigation process for earthworks in adverse and extreme rainfall
- Flood management plan and database
- Critical drainage asset management
- Coastal strategy
- Signalling SMS A13 reinstating flooded or water affected equipment
- Scour (inc requirements at scour risk sites with bridges having spans >10m)
- Seasonal working arrangements
- Key Route strategies for adverse weather working
- List of 'At risk' assets for each discipline
- Ice in Tunnel Shafts
- Route strategy for proving trains
- EWAT process
- Scenario & stress testing requirements
- Remote monitoring strategy

This will enable us to better inform plans for implementation of specific weather resilience works in CP7.

7.7. Technology (R&D) strategy

We have been working closely with our Franchise Operators and other industry partners in developing innovation in the field of Infrastructure Monitoring. This has led to us delivering incremental benefits to our ability to predict failure and gain important intelligence on our asset base in the key interface areas of Ride Quality in relationship to Track Quality and the Pan OLE Interface. Our work, and the findings of this research and development, is being shared across industry and with other Routes, and is directly linked to the National Strategies for R&D. We intend to continue to progress this work, turning those beneficial parts of the research into business as usual delivery and continuing to develop the capability to analyse our system data into intelligence going beyond predict and prevent and into the diagnostic phase.

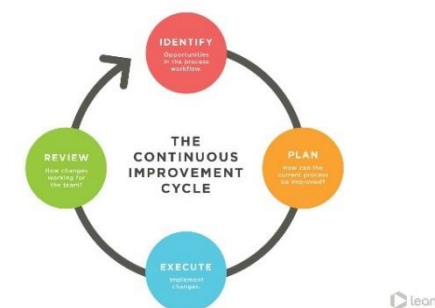


Data analysis is our next focus area. We have a number of small discrete pieces of data analysis work being undertaken within development projects, our next activity is to link this work with newly created central team, Data Analytics. Our data from those development projects is now being shared with industry partners working on European research projects in the Shift2Rail and Horizon 2020 projects and we are helping to shape and set objectives for their outputs.

We have been and will continue to be keen to be a deliverer or trial route for many development projects funded by central led strategies and our ambition is to do more of this activity to develop our people and align those development projects to our asset strategies. We are the route representative on the STE Product Development Framework Panel which takes development projects from their concept seed corn ideas stage all the way through to industrialisation using the Rail Industry Readiness Levels.

We have developed our understanding of the whole systems approach to problem solving. We want to take this into a place where this becomes the culture of our people, not just in our engineering and asset teams but right across our business and drive the approach with our customers, our contractors and our suppliers. We are driving this behaviour into the discussions with our franchise operators. We start this process at bidder meetings and then take this collaborative approach in development projects, problem solving workshops, customer focus groups, and eventually we see this as a standard operating model that can break down barriers that normally stifle innovation and positive change.

Our key message is that we are committed to a continuous improvement culture and research and development is one area that helps deliver that goal.



7.8. Innovation strategy

Our plans for innovation can be summarised in a number of strategic areas. Our LEAN Programme is currently delivering a training programme and a number of LEAN projects of incremental continuous improvement aimed at the heart of our business delivery. Our people improving the way we work and ultimately delivering improvements to their customers whether they are internal or external customers. Some of those LEAN projects improve a process or may even recognise where a process is required, some projects deliver time and cost savings to the business. Our strategic business delivery tool comes directly from our Lean Programme. As described in Section 2, the X-Matrix is now in use and will enable us to focus on the things that matter to us as we exit CP5 and begin our CP6 delivery. The X-Matrix roll out has begun at the LNW Executive and rolled down into the organisation so that line of sight can be visualised directly to the scorecard measures and into key initiatives for innovation and business improvement, we will continue to improve our use of this tool and review its effectiveness through CP6.

As mentioned in Section 7.7 above, our R&D activity in CP5 will continue and some of the discoveries we have made in CP5 are being delivered that will be innovation focused during CP6. Working with the bid teams we have recently been going through the process of wording for the new franchise agreements on LNW route. This has enabled us to get agreements embedded in those franchises for joint innovation workstreams, such as fitment of equipment to trains that measures the infrastructure, working together on whole system data sharing and analysis of the system wide data.



Instrumented pantograph on a West Coast Pendolino

In CP6 we will move a number of key activities that have been proven to deliver benefit through the R&D in CP5 into Innovation delivery, these include Instrumented Pantographs, passenger trains measuring vertical and lateral accelerations and the data analysis for system review, video analysis of the OLE/Pantograph interface. There are many more R&D workstreams which with targeted business cases could be brought forward as innovation workstreams for CP6, our focus will be to change the way we work to make those things happen faster and drive the benefits into the industry.

Two of the significant changes in CP6 are the move to Continuous Business Planning working within government departmental expenditure limits and Route Regulation. We have been looking at how innovation can help in supporting these changes and have begun our journey in the adoption of specialist software that helps us manage our business plan more effectively and gives us the visual tools and management information to make better decisions. The continuing development of our LNW information management system will make a significant improvement in our capability. As we innovate further in this area during CP6 we will expand our team delivering this innovation and expand it into other areas of our business.

7.9. Asset management capability

We will adopt and embed a structured continuous improvement approach to developing and delivering our Enhancement, Renewals and Maintenance Asset Management Plans to provide a safe and reliable railway.

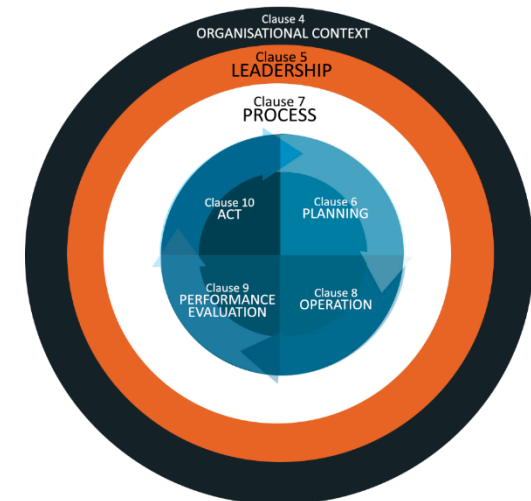
We have already started our journey towards ISO55001 (*Asset management - Management systems – Requirements*) certification through implementation of an alignment plan. Through CP6 we will work towards fully complying to the requirements of ISO55001 by the end of the control period. The key is to define, document and monitor our asset management system against the ISO55001 clauses seen in the below diagram with particular focus on these areas:-

Continuous Business Planning - This focuses on understanding the core process for decision making, planning and delivering asset management activities on our infrastructure, developing our capability to a point where we have a single recognised version of the plan in which all asset managers and deliverers have been involved and contributed. The asset management plans have clear ownership, are live, integrated and continuously updated.

Asset Management Capability - We will develop the required culture, competencies, leadership and organisation through provision of competency tools and training. This will allow a clear map of the skills and capabilities we need in each role, addressing key gaps and enabling succession plans to be put in place.

Asset Information - Our asset data management and governance improvements will deliver a foundation of trusted asset knowledge which will underpin effective decision making. We will develop and improve the capability to analyse asset data and the associated workbanks to provide key management information that will provide a health check of our LNW asset management system.

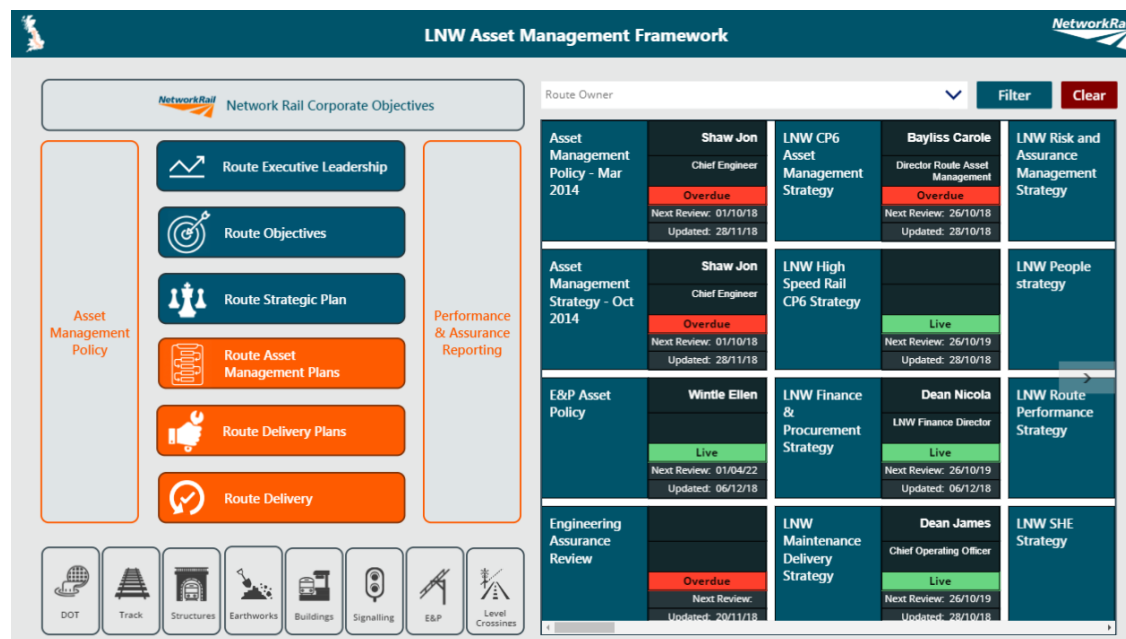
Continuous Assurance and Improvement Culture - We will constantly and consistently analyse risks and assure the asset management system such that we develop a common understanding of the overall asset system and interfaces, identify where issues exist, exploit potential opportunities and drive continuous improvement. We will monitor and develop our compliance to legislation such as CDM.



To deliver the Asset Management capability improvement we will initially focus on embedding an effective asset management system within our business. A key part of achieving this is aligning our route planning and delivery with the asset management framework and publishing our route asset management plans in a clear, accessible and structured system. This system will provide the line of sight needed to connect all activity with the principle objectives we aim to achieve.

We already started the journey in CP5 by laying down the foundation in a cloud based system called 'SharpCloud' however through continuous development the asset data team have identified a more suitable platform which allows more flexibility in how we can document our asset management system to achieve certification against ISO55001.

The LNW Information Management System (IMS), now built in Microsoft PowerApps, allows additional functionality such as an automated health check on our asset management system, flagging overdue items and automated email alerts to the relevant people within the organisation. The IMS also allows many different views to be applied making the overall platform more relevant depending on the intended audience. The foundation of the platform is housed in Microsoft SharePoint Online and forms our Information Asset Register (IAR) which defines clear accountable owners, responsible persons, review dates, information security classifications, tags for searching, modification dates and relevant processes (including direct linkage). This is a fundamental building block of our asset management system and allows for much more integration to reporting tools for reviewing purposes. Below is a snapshot of the LNW IMS platform (built in Microsoft PowerApps):-



Allied with the implementation of an effective asset management system we are reviewing our organisational structures to strengthen our asset management capability by making responsibilities clearer, to embed continual business planning, and establish delivery integration at its core.

Our Route System Review Panel (SRP) is already established as best practice in Network Rail and we have built the foundations of an effective panel and supporting activity to oversee the safe and technical integration of system change. We will continue to develop this capability adding to our remit and delivering a value added service to support the effective delivery of our business plan. SRP is vital to the safe integration of the major programmes such as HS2. We will also embed our approach to the management of CDM through SRP. We have been recognised as industry leading in this area and through collaboration with the ORR we are challenging the industry norms addressing issues that matter to our customers as well as to our Route Business. We have worked with TOCs and 3rd Parties to support and in some cases assist them in delivery of the legislative requirements particularly their role in the Common Safety Method and how to demonstrate Systems Integration and Systems Compatibility.

We have recently agreed to work with MerseyTravel to fully Integrate their Class 777 New Train Introduction Programme, which will see us work in close collaboration with MerseyTravel the funder and client, MerseyRail the TOC, Stadler the rolling stock manufacturer and Network Rail IP delivering the Infrastructure enhancements. LNW SRP in addition to its usual remit will provide a Systems Integrator role demonstrating safe and technical integration and compatibility over the whole programme. This model will become the new benchmark for our offering to the routes customers and funding partners. Our LNW SRP Chair has recently been given delegated responsibility to sign the Statement of Compatibility for the Class 777 rolling stock introduction and we have decided to establish the LNW Route Systems Compatibility Group. We will have members from across the industry and a remit is in development for the beginning of CP6 that will continue to evolve as we embark on new projects and challenges.

7.10. Specific Sustainability Targeted Investment

We are unable to address all of the long term asset sustainability issues on LNW Route within the proposed financial parameters for CP6 and this results in a net increase in average asset age over the Control Period as illustrated in the Long Term Forecasts in Appendix H. As a consequence, we have increased life extension and refurbishment activities to maximise the availability and reliability of our ageing assets.

In developing our proposals for CP6, we looked at increased efficiencies and cost savings to enable additional expenditure on asset sustainability. Overall this released an additional £136m for expenditure on asset renewals in CP6. Our review of options for expenditure of this further budget extended beyond our direct assets and we included an industry sustainability issue at the request of one of our stakeholders who were unable to address it themselves. This involves the replacement of the obsolete Automatic Train Protection (ATP) system on the Chiltern lines where, although the trackside equipment is still sustainable until CP7 or beyond, the train borne equipment is obsolete and spares are becoming unobtainable. Hence, rather than facing an issue of having to take trains out of service because of non-functioning ATP equipment, we have allocated funding towards replacing it with the more recent Train Protection & Warning System (TPWS+). Presently, until we have undertaken further development, the overall cost of the full replacement of the ATP trackside equipment is not known so we have included a budget provision at this stage.

Activity	Expenditure in CP6 (£m)
Replacement of Chiltern ATP	30
Additional earthworks adverse weather sites	17.5
Additional earthworks high criticality sites	30
E&P switchgear renewals	7.5
Additional track drainage works	33
Additional S&C heavy refurbishment	13
Repair & refurbishment of signal & OLE gantries	5

The other key area we have addressed is in earthworks. Here assurance by STE of our previous proposals highlighted concerns with the volume of renewals works proposed and we have used this targeted investment to increase our renewals activities by almost 50% over CP6. In addition, these works contribute high sustainability benefits in addition to helping to reduce train accident risk and other performance issues associated with earthworks.

The additional asset sustainability budget has been allocated as detailed in the table to the right and these works are fully integrated into our renewals workbank, as summarised in Section 10 below.

8. Brilliant Service for Taxpayers

8.1. Overall approach


Successful financial performance is the combined outcome of many contributing factors, including third party performance in running trains or delivering projects. We are subject to unpredictable weather patterns and public behaviour events such as theft and trespass, all of which ultimately have a financial impact. For this reason, delivering required outcomes can be very challenging and is less predictable than we would like. Strategic initiatives to improve risk awareness and drive timely interventions are critical deliverables in our CP6 plan as we have seen how one single trespass event can cost a busy route such as LNW many millions in compensation over a relatively short time-frame. To deliver an offsetting efficiency of this magnitude is more challenging and can take several years to deliver. Similarly, large enhancement projects can impact financial performance with huge positive and negative swings in anticipated final cost. By strengthening the relationship between Route Finance and the Sponsorship team and Infrastructure Projects, we aim to work together collaboratively to identify mitigating steps.

The efficiency challenge in CP6 is stretching and our ability to deliver will be subject to changing market conditions and economic factors beyond the Route's control. In several areas we have launched our initiatives to drive identifiable savings. These are underway and being tracked by Finance, which is a well-established routine carried over from CP5. What is new is a requirement to become more disciplined in identifying and recording headwinds as they arise over the Control Period. Key to success in delivering efficiencies will be our relationship with the supply chain and our drive to improve unit rates through negotiation, innovation and performance management. To this end, the Route has established a working party of commercial professionals from Route Services, Infrastructure Projects and the Route so that we can collaborate and develop the best collective outcomes for the Route. Underpinning all of this is the cultural change to develop cost conscious thinking and a hunger to continually identify and implement new efficiency schemes. This is perhaps the biggest and most long-term objective of all.

Finally, we have included an overview in section 8.4 of how we are seeking external funding for LNW in CP6 and the Long Term Scorecard includes end of control period targets for this activity.

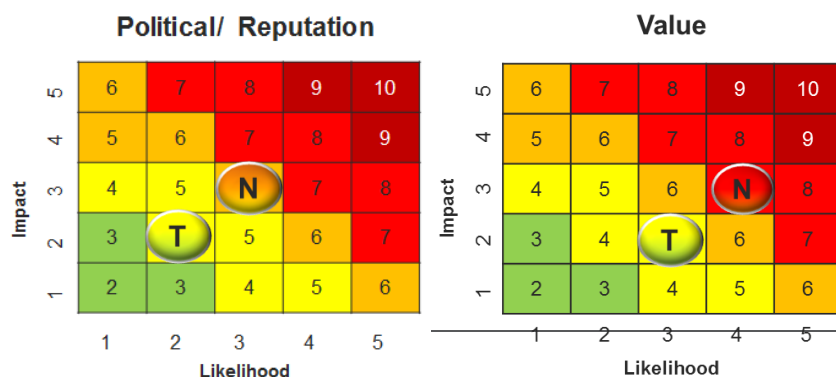
8.2. Financial performance objectives

Brilliant Service for Taxpayers		19/20	20/21	21/22	22/23	23/24	24/25	25/26	Achievability
Top investment milestones	WORSE THAN TARGET	80%	80%	80%	80%	80%	/	/	
	TARGET	90%	90%	90%	90%	90%	/	/	
	BETTER THAN TARGET	100%	100%	100%	100%	100%	/	/	
Financial Performance Measure – gross excl. enhancements (£m)	WORSE THAN TARGET	/	/	/	/	/	/	/	
	TARGET	0	0	0	0	0	/	/	
	BETTER THAN TARGET	/	/	/	/	/	/	/	
Financial Performance Measure – gross enhancements only (£m)	WORSE THAN TARGET	/	/	/	/	/	/	/	
	TARGET	0	0	0	0	0	/	/	
	BETTER THAN TARGET	/	/	/	/	/	/	/	
Cash compliance – income & expenditure	WORSE THAN TARGET	/	/	/	/	/	/	/	
	TARGET	0	0	0	0	0	/	/	
	BETTER THAN TARGET	/	/	/	/	/	/	/	
External funding (£m)	WORSE THAN TARGET	/	/	/	/	288	/	/	
	TARGET	/	/	/	/	328	/	/	
	BETTER THAN TARGET	/	/	/	/	363	/	/	

KEY	
	= NOW – Current position
	= TARGET – position at end of CP6

8.3. Financial performance activity prioritisation

No	Key constraints, risks and opportunities	What we plan to do	Owner	Timescale (start/finish)
1	Opportunity: Develop a cost conscious culture within the Route to challenge expenditure and identify waste	Regular initiatives such as having price tags on items in stores and establishment of a 'cost hour' every period to highlight issues and solutions	All	Now/End of CP6
2	Opportunity: Management of risk fund within LNW Route	Target available funds to realise contingent renewals and investment options in Appendix D	RMD, RFD DRAM	All CP6
3	Constraint: CP5 deferrals could impact CP6 workbank planning and stability	Regularly review future workbanks and asset condition to ensure work is planned and delivered appropriately to maintain supply chain stability	DRAM	Now/End of CP6
4	Constraint: Insufficient funds to achieve asset policy compliance leading to having to adopt lowest initial cost approaches rather than lowest whole life cost	We will adopt a risk based approach for assessing renewals workbanks and maintenance needs	DRAM	Now/End of CP6
5	Risk: We do not achieve our forecast train performance throughout CP6 and incur more Schedule 8 charges	Regular reviews of performance management plans and active management of trends identified	COO	Now/End of CP6
6	Risk: Underspend against targets leads to loss of funding under new departmental expenditure limits	Close monitoring of actual expenditure versus planned and early intervention if adverse trends identified	DRAM COO	All CP6
7	Risk: Fluctuations in large contract rates over and above identified headwinds in our plans that affect our cost base	We will work collaboratively with our deliverers to ensure that our volumes are understood and our requirements are accurately forecast to enable the best contracts going forward. We will also focus upon waste in contracts to drive efficiency and improve post-contract management	RFD	Now/End of CP6
8	Risk: During CP5 we have been significantly affected by adverse weather necessitating emergency schemes at Eden Brow, Harbury etc. This has affected funds / resource / FPM	We have included a small provision in our plan to mitigate against the FPM impact caused by adverse weather but not extreme events. We have increased monitoring and have adopted a targeted approach to asset renewals activities to mitigate this risk	DRAM RFD	Now/End of CP6
9	Risk: Failure to reduce the frequency or impact of suicides occurring south of Rugby, which has a disproportionate negative impact on Schedule 8 costs	Multiple interventions to prevent suicide and improve service recovery times. See Section 4.3, item 7, above	DoRSHE, COO	Now/End of CP6



Summary of risk outcome

Our risks in CP6 are the dependencies on third parties to deliver train performance against a backdrop of uncontrollable weather events, trespass and crime. Achieving the set efficiency targets will be subject to the risk of changing market conditions and economic factors beyond our control. We also need to adapt to the introduction of new financial management regimes in CP6 of which we have no experience to date

8.4. Financial Sustainability strategy

LNW Route has a demonstrable track record of attracting third party funding for railway enhancements based on strong relationships with stakeholders and funders. Across CP5, more than £500m of third party enhancement funding was invested in the railway of LNW. Of this, £260m related to two large projects (Birmingham New Street Gateway and East West Rail Phase 1), with approximately £250m invested in a wider range of network and station enhancements.

LNW Route shares the ambitions of our stakeholders, customers and communities to grow the railway even further. These ambitions are unlikely to be met entirely by available central government (DfT Rail) funding. Government has set out the need to 'maximise possible third party funding contributions' (Railways Act 2005 Statement High Level Output Specification, July 2017). Our challenge is to attract increased levels of third party funding to invest in the railway - from business, developers and other parts of the public sector (for example local government, LEPs and new sub-national transport bodies).

Our business development vision for CP6 is to explore every opportunity to secure funding for projects to grow the railway. Our priorities will be to secure investment for rail enhancements to:-

- Accommodate passenger and freight growth
- Support economic growth across the regions served by LNW
- Meet local needs identified by our partners and stakeholders

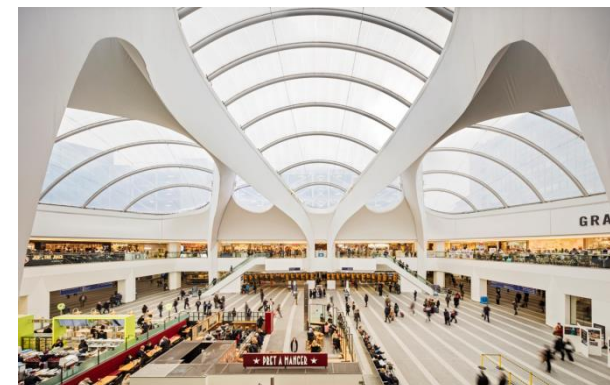
A key priority for LNW is strategic network enhancements, including East West Rail and works required to support the introduction of HS2, for instance the Crewe Hub. Through the Transport for the North and Midlands Connect partnerships, Network Rail is working to support the transformation of the economy as part of the Northern Powerhouse and Midlands Engine (respectively). Establishing the business case and funding mechanisms will be a priority.

LNW Route is working closely with Merseytravel to deliver a series of enhancements to the Merseyrail network and depots to enable the introduction of new rolling stock. The new units will provide increased passenger capacity to accommodate future growth.

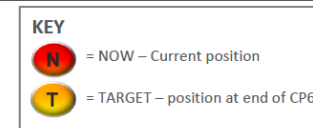
In addition to the large strategic network enhancements set out above, the LNW Route will continue to develop a wide portfolio of projects with funders. Our assessment of the scale of the opportunity indicates there are more than 100 projects in CP6 with the potential for third party funding.

Our business development strategy for CP6 strategy comprises the following key elements:-

1. Providing a dedicated point of contact (the LNW business development team) for third parties wishing to invest in the railway; developing and maintaining strong relationships with a wide range of bodies, including businesses, local authorities and sub-national transport bodies.
2. Developing new models of collaboration to facilitate funding and delivery of projects.
3. Making it easier for third parties to undertake the delivery of railway enhancement projects they are funding; implementing fully the Open for Business initiatives and transforming the experience of asset protection.
4. Developing new and innovative funding, financing and delivery models for railway projects.
5. Working with DfT, franchise bidders and train operators to develop opportunities for accommodating growth, especially train lengthening and depots / stabling.



Birmingham New Street Gateway



9. Delivering HS2 Integration for Route Businesses

9.1. Overall approach

HS2 is Europe's largest infrastructure project. Network Rail is playing a vital role ensuring the new line benefits as many people as possible: HS2 will connect onto the existing rail network, running direct services to major cities and towns in the Midlands, North and Scotland utilising significant elements of Network Rail infrastructure. It is important that HS2 works are successfully integrated into Network Rail Route Businesses.

Key challenges are:

- **WCML Capacity** - The West Coast Mainline is running out of space. Without HS2, the line capacity would be full by mid-2020s and hundreds of thousands of customers would not be able to board trains at peak times
- **Wider Rail Industry Connectivity** - The rail industry must be ready to meet future demand and to support the economy by linking people with jobs and opportunities
- **Supporting Growth** - To better support growth and rebalance the economy whilst transforming UK communities and regenerate the regions beyond

HS2 will be constructed on and alongside LNW Route in CP6 and into CP7. Potential construction impacts will be mitigated as required, to enable us to continue to deliver a high performing railway for our customers. For example, availability of operational and supply chain resources, access requirements and additional traffic for moving spoil.

9.2. HS2 objectives

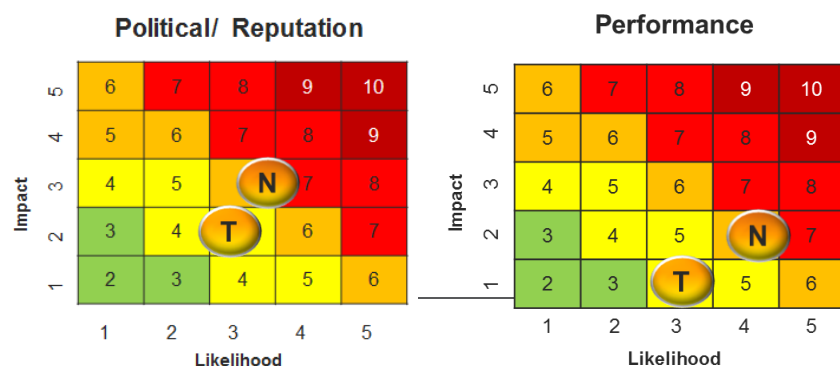
We have not included any metrics on our Long-Term Scorecard with regards to HS2 Integration because of the diverse and wide-ranging issues involved. However, in our policy deployment approach outlined in Chapter 2 above, we identified a specific strategic initiative for CP6 for this area entitled 'Deliver HS2 Integration'. This reflects that, although the most visible activity in CP6 will be the construction of HS2 itself, CP6 is also the time in which LNW Route needs to prepare itself to accommodate HS2 services using its infrastructure from CP7 onwards. A copy of our initial action plan for this can be found in Appendix D.

9.3. Stakeholder Priorities

Key stakeholder priorities	Response
NR Business Continuity (NR Internal Stakeholders, including Route Businesses)	We are committed to working with colleagues across Network Rail, to integrate HS2 activities and co-ordinate access and supply chain requirements, whilst maintaining business continuity. We work closely with multiple NR Route Businesses and other NR Teams, such as the System Operator, Freight and National Passenger Operators (FNPO) and Route Services Supply Chain Operations
Improved Infrastructure (DfT)	Regularly demonstrate progress to the DfT, to evidence the benefit to the rail industry and UK PLC
Successful Programme Delivery (HS2 Ltd)	The Implementation Partnership Agreement outlines the collaborative relationship between HS2 Ltd and NR. Joint working will make sure that there is an aligned view of the programme. HS2 Ltd are accountable for the successful delivery of the programme of HS2 and are also the Client, so a close working relationship is key. Network Rail is delivering the On Network Works as listed in section 10.3 below
Minimise Disruption to Passenger and Freight services (TOCs/FOCs)	We are proactively working with industry stakeholders to minimise any negative impact from the HS2 programme, through holding regular workshops and consultations, as well as integrating possessions with other railway schemes
Satisfy local needs (e.g. Local authorities)	We are proactively working with local authorities and other government agencies, to minimise any negative impact from the HS2 programme

9.4. HS2 activity prioritisation

No	Key constraints, risks and opportunities	What we plan to do	Owner	Timescale (start/finish)
1	Opportunity: Sharing of access costs with HS2 for our works	LNW Integrated Planning Team (HALO) to continue to develop possession activity so that works can be integrated	COO	Now/End of CP6
2	Opportunity: Development of Crewe to Glasgow rail infrastructure	Work with System Operator HS2 Integration Director and HS2 Ltd to successfully integrate into LNW work banks	DRAM	Now/End of CP6
3	Constraint: Reduction of number of platforms at Euston from 18 to 16 reducing ability to accommodate increasing growth, deliver reliable train services and successfully manage perturbation	Work with industry partners on revised operational and other approaches to continue to be able to deliver a high performing West Coast Mainline during the construction of HS2	HS2SD, COO	Now/End of CP6
4	Constraint: Relocation of Willesden HOOB, Euston DU and Saltley DU will disrupt maintenance and renewals in CP6	Identify and protect maintenance compliance during the relocation of key operational teams	HS2SD, COO, DRAM	Now/End of 2019
5	Risk: HS2 works along the LNW Route will cause disruption, use access opportunities and require industry resource to supervise	Integrated planning with HS2 team & detailed performance mitigation planning	HS2SD	Now/End of CP6
6	Risk: Funding potentially unavailable for all identified LNW Route mitigation works	Prioritise activities based on protecting LNW Route operations through design or asset protection activity	HS2SD, COO	Now/End of 2019
7	Risk: HS2 construction at Euston constrains passenger capacity/pedestrian flow on station, leading to passenger dissatisfaction and cost	Continue to develop mitigation measure to ensure safe operation of the reduced concourse area	HS2SD, DRS	Now/End of 2019
8	Risk: Accommodating HS2 services on the classic network causes disruption to existing services and capacity	Work with HS2 Limited and industry partners to identify impacts and derive suitable mitigations that are deliverable prior to HS2 services commencing	System Operator	Now/End of 2020
9	Risk: HS2 mass haul traffic impact on asset condition and haulage availability	Manage applications for paths using existing protocols. Forward planning of haulage requirements for LNW works	HS2SD	Now/End of CP6
10	Risk: Reduction in supply chain capacity available to LNW Route due to HS2 workload in CP6	Confirm resource availability with framework and other suppliers and give early visibility of CP6 work banks	RDD, DRAM	Now/End of CP6
11	Risk: Significant shift in HS2 Programme results in increased schedule 4 costs where Network Rail are required to reschedule	Work closely with HS2 Ltd to refresh integration plans and identify opportunities to work collaboratively in the same possession	HS2SD, COO	Now/End of CP6



Summary of risk outcome

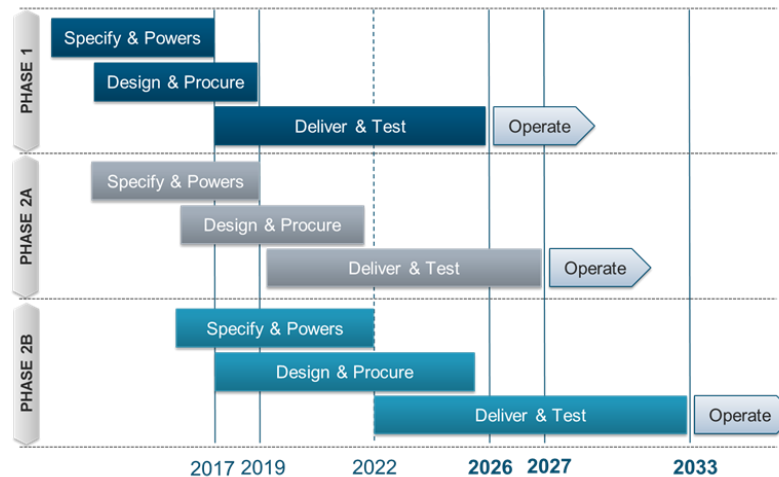
Proactive management and collaborative working with stakeholders is planned to mitigate impacts of the construction of HS2 during CP6 and sustain performance levels on LNW Route. There remains a risk that our management approaches prove insufficient or significant changes occur which render them ineffective. Other specific risks include the underestimation of the cost, impact and complexity of the relocation of key maintenance and other Route facilities to accommodate HS2

9.5 Delivering HS2 Integration for the Route Businesses

There are numerous route interfaces with HS2 on LNW, Scotland, LNE, Western, Anglia and South East. LNW are the allocated lead Route for the HS2 programme. We have established both a dedicated High Speed Rail Team (HSRT) to manage these interfaces and the works needed to accommodate the new lines and operation of HS2 services on our infrastructure in CP7, and an asset protection team manage the day to day interface between the HS2 works and the operational railway on LNW Route.

Our HSRT work closely with the System Operator HS2 Integration Directorate, to enable development of feasible solutions that can be delivered with the least impact on all NR Routes and their customers, whilst our Asset Protection team ensures that the HS2 works are undertaken safely and to the right standards, and that other interfaces to the day to day activities of LNW Route are properly identified and addressed.

'Deliver HS2 Integration' is one of the primary CP6 strategic initiatives for LNW Route and we have developed a Team Charter supporting this. A copy is included in Appendix D.

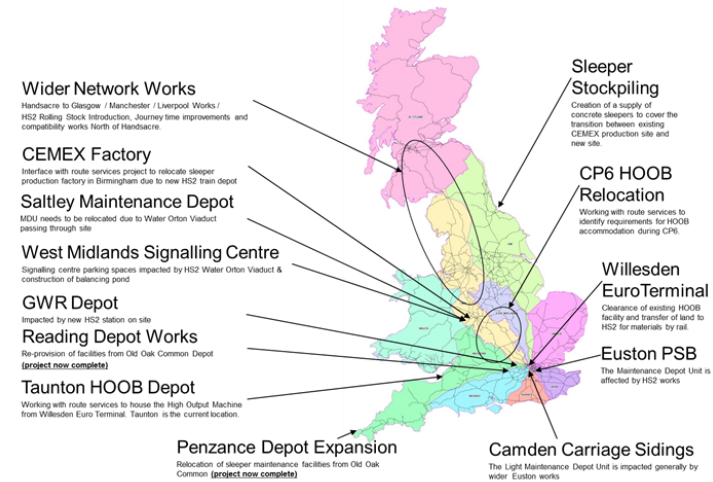


HS2 Limited roadmap to 2033

HS2 has a physical interface with the existing railway network at many points, with over 100 assets that need to be removed or changed. The major touch points are:

- Crewe station
- Manchester station
- Leeds station
- Manchester-Leeds corridor (Northern Connectivity)
- Other connections depending on Phase 2 route

- Euston station
- Old Oak Common (realignment of GWML)
- Handsacre (junction with WCML)
- Line of route interfaces (eg East-West Rail at Calvert)
- Wider Network Works



Wider scope of works & strategic operational assets affected

10. Activities & expenditure

10.1. Cost and volume summary

This plan is predicated on the key assumptions laid out in Appendix B and will be impacted as these assumptions change

Overall summary of CP6 expenditure:-

<i>Cash prices</i>	CP5 (£m)	CP6 (£m)					CP7 (£m)	
	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26
Operations	162	155	161	166	171	176	188	194
Maintenance	326	381	396	408	421	434	435	440
Support	18	13	13	11	13	12	25	26
Reactive Maintenance	33	32	33	34	33	32	29	29
Risk Funding	0	15	60	84	104	141	0	0
Total Renewals	426	466	593	711	659	558	759	744
Non – Controllable Costs	0	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Total Expenditure	965	1,060	1,256	1,412	1,399	1,351	1,434	1,431

Notes

1. We have adjusted our detailed plans to align with nationally set targets and as a result they contain less renewals work than we would consider necessary to deliver sufficient sustainability in CP6. Our options for additional expenditure in Appendix F contain details of those further renewals we would undertake should our risk provisions not be required ('contingent renewals') or additional funding is secured ('investment options').
2. Our renewals expenditure excludes the ESIP funded E&P works (see section 4.4.1)
3. Our OPEX expenditure includes the impact of additional assets introduced in CP5 by enhancement schemes such as the NW Electrification Programme, the Ordsall Chord etc (see section 10.2), and the cost of the HS2 sponsor team.
4. We have not included any funding for the works required to deliver the HS2 On Network Works and have assumed that they will be funded by others. Our OPEX and CAPEX plans recognise them as headwinds and risks, and include allowances in this regard.

RENEWALS COSTS (post headwinds and efficiencies in cash prices)

CASH PRICES	Unit of Measure	Funded by	CP6 (£m)					CP7 (£m)	
			19/20	20/21	21/22	22/23	23/24	24/25	25/26
Track	£m	Renewals	151	154	146	157	150	327	339
Conventional Signalling	£m	Renewals	80	179	279	266	204	178	237
Structures	£m	Renewals	83	95	100	84	85	108	112
Earthworks	£m	Renewals	46	40	37	39	34	50	50
Buildings	£m	Renewals	46	53	87	55	36	63	65
Electrification & Fixed Plant	£m	Renewals	34	39	39	33	31	40	42
Drainage	£m	Renewals	27	31	23	24	18	50	53
Other	£m	Renewals	0	0	0	0	0	0	0
Total Renewals	£m	Renewals	466	593	711	659	558	817	897

KEY VOLUMES

	Unit of Measure	Funded by	CP6					CP6
			19/20	20/21	21/22	22/23	23/24	
Plain Line	Linear track km	Renewals	165.4	241.5	235.5	227.7	195.8	1,065.8
S&C	No. of S&C units	Renewals	128	146	122	123	97	616
Conventional Signalling	SEU	Renewals	19	6	293	493	150	961
Embank/Soil Cut/Rock Cut	No. of	Renewals	443	685	721	737	538	3,124
Underbridges	Number of assets intervened on	Renewals						
Underbridges	m2 plan deck area worked on	Renewals	9,274	9,948	9,948	9,948	9,948	49,066
Wire runs	No. of	Renewals	5	11	8	7	0	31
Conductor Rail renewal	Km	Renewals	0	3.6	2.2	0.7	3.2	9.7

OPEX COSTS (post headwinds and efficiencies in cash prices)

	CP5 (£m)	CP6 (£m)						CP7 (£m)	
		18/19	19/20	20/21	21/22	22/23	23/24	CP6	24/25 25/26
Track		156	162	167	172	177	177	834	
Off track		18	20	21	23	24	24	106	
S&T		59	61	62	63	65	65	310	
E&P		34	36	37	38	39	39	183	
DU HQ		43	38	39	40	41	41	201	
DU/WD Maintenance	excl. B&C	310	316	326	336	346	346	1,634	
Non DU Maintenance		71	80	82	85	88	88	406	
Civils: Buildings Maintenance									
Civils: Structures Maintenance									
Civils: Earthworks Maintenance		32	33	34	33	32	32	163	
Total Maintenance Costs		413	428	442	454	466	466	2,204	
Operations		155	161	166	171	176	176	830	
Support		13	13	11	13	12	12	63	
Operations & Support Costs		168	174	177	184	188	188	892	
Risk funding		15	60	84	104	141	141	404	
Total Controllable Costs		598	662	704	744	797	797	3,506	
Non-Controllable Costs		(2)	(2)	(2)	(2)	(2)	(2)	(9)	
Headcount									
Permanent		7,898	7,901	7,936	7,948	7,962	7,962	7,962	
Agency		70	73	73	73	73	73	73	

10.2. Enhancements

In CP5, significant numbers of enhancement schemes were delivered on LNW Route and passenger and freight benefits are now being realised. These include the following:-

- Walsall – Rugeley Trent Valley electrification
- NWEF Phase 1 - Castlefield Jcn Manchester to Parkside electrification and journey time improvements
- NWEF Phase 2 - Edge Hill to Earlestown, Huyton to Wigan, & Ordsall Lane to Manchester Victoria electrification, Huyton to Roby four tracking, and journey time improvements
- NWEF Phase 3 - Preston to Blackpool North electrification, remodelling works at Blackpool North and Kirkham, Blackburn depot, and journey time improvements
- NWEF Phase 4 - Manchester to Preston electrification, remodelling works at Bolton and journey time improvements
- Northern Hub schemes - Ordsall Chord, Manchester Airport 4th platform, Rochdale turnback and Calder Valley journey time improvements
- Liverpool Lime Street remodelling and resignalling
- West Coast Power Supply Upgrade Phase 3B
- Stafford area improvement scheme
- East West Rail Phase 1 from Bicester to Oxford
- Birmingham New Street Gateway
- Bromsgrove electrification and new station
- Redditch Branch enhancement
- Kenilworth station
- Banbury Light Maintenance Depot
- Chiltern Main Line Train Lengthening

We have included the impact on our operations and maintenance activities of the above enhancements in our proposals for CP6 detailed in section 10.1 above.

On LNW Route there are presently no enhancements as yet confirmed to be undertaken in CP6. The process for developing and the jointly deciding to commit to delivering future enhancements with the DfT is through the Enhancements Framework and is based on Network Rail's Investment Delivery Framework (IDF). Some of those currently under consideration are listed in Section 6.6.3 above. Further details of the mechanisms for the funding and development of enhancements in CP6 can be found in the System Operator's Strategic Plan.

10.3. HS2 associated works

In order to accommodate HS2 infrastructure and future HS2 services on LNW Route in CP7, works have been identified on our infrastructure as outlined below. This is not a definitive schedule and will change as proposals are developed, and the items therein will be funded separately to the operations, maintenance and renewals expenditure described in this plan. These works are being managed through LNW Route, Infrastructure Projects and the System Operator as described in Section 9 above.

Programme	Projects
HS2 Phase 1 On Network Works	<ul style="list-style-type: none"> • Euston Enabling works – Station, Railway Systems, 11kv diversion & essential works • Central East West Rail • Handsacre Junction • Ground investigation • HALO activity • Double tracking Leamington - Coventry • Water Orton Corridor electrification & additional capacity • HS2 mass haulage strategy • Water Orton Corridor - Cemex Stockpiling & Saltley DU
HS2 Phase 1 Rolling stock associated works	<ul style="list-style-type: none"> • Rolling stock intro - gauging (TIIS) • Alterations to NR Infrastructure when gauge/route information is available
HS2 Phase 1 Timetable works	<ul style="list-style-type: none"> • Stafford South Junction • Wigan - Euxton • Preston Passenger capacity • HS2 Station branding improvements • HS2 Depot enhancements • HS2 required WCML linespeed improvements
HS2 Phase 2A On Network Works	<ul style="list-style-type: none"> • Interventions as per HS2 hybrid bill • Crewe remodelling & resignalling • Madeley - Crewe ONW Asset Protection • Staveley - New Crofton • Stone • Sandbach - Manchester Piccadilly • South of Crewe Works
HS2 Phase 2B On Network Works	<ul style="list-style-type: none"> • Rolling Stock depot
HS2 Phase 2 Timetable works	<ul style="list-style-type: none"> • Sandbach to Manchester interventions • Crewe to Manchester interventions • Crewe to Weaver

10.4. Digital Railway strategy

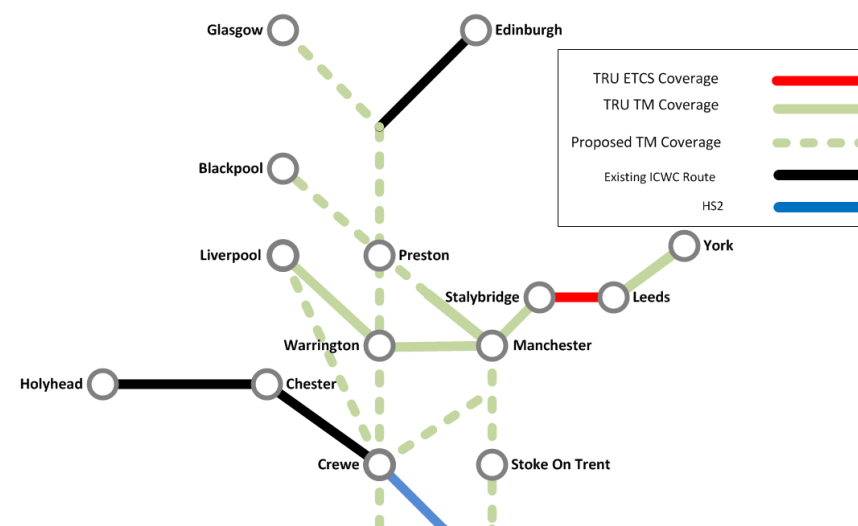
The Digital Railway Programme (DRP) is a cross industry rail modernisation programme which will deliver benefits to passengers, business users and the national economy.



The railway is already full in many places and more capacity is needed urgently to improve performance and the passenger experience. Changing the way the railway operates together with traditional infrastructure enhancements will release new capacity from the existing network.

Network Rail is committed to working collaboratively with rail operators and technology partners to develop cost effective and innovative solutions to the challenges of the railway. DRP is currently working with various Routes to understand how Digital Railway can help them meet tomorrow's challenges of capacity, performance, safety and reliability in the most efficient, effective and economic way. These proposals are feeding into the DfT and Route's plans for CP6 linking future renewal plans with committed and planned enhancements and looking at opportunities for innovative funding and delivery options.

Although the LNW Route plan does not currently include any Digital Railway interventions, except where proposed as part of the Transpennine Route Upgrade, we see several opportunities for digital solutions on the route. These range from improving performance through a holistic approach to traffic management, particularly through the major inter-urban routes between Manchester (Castlefield Corridor), Preston, Crewe, Warrington and Liverpool, and on the West Coast mainline south of Rugby. We are also engaged in ongoing studies and discussions with DRP and the DfT with regard to the potential introduction of ETCS on East West Rail Phase 2 (Bicester to Bletchley), at Crewe, and Crewe to Weaver Junction, as part of the HS2 transition to the Classic Network, as well as other 3rd party infrastructure projects on the Route such as on the Cumbrian Coast.



Potential extent of Traffic Management on LNW North

The LNW Digital Rail Route Steering Board will identify and prioritise work to further explore the business case for these schemes. As a cross industry group, the Steering Board will ensure that our Digital Rail Strategy is aligned with the requirements of our industry partners.

10.5. Telecoms strategy**Telecoms - 1 of 3****Current Asset Performance*****Performance***

There has been a continued improvement in CRI service affecting failures with additional renewals of level crossing telephones benefits derived from the GSMR Artemis improvement initiatives. These will continue to be developed throughout CP6. The route target for the number of incidents is ahead of target as of P7 at 170 incidents against the target of 182 and despite problems with the soon to be renewed infrastructure in Merseyrail, the delay minutes are ahead of target at 9,360 minutes against the forecast 12,521 putting LNW in a strong position for meeting the year end targets.

Sustainability

Sustainability targets will be achieved by delivering against the target investment plan in keeping with targets set by ORR, and avoiding overspend to stay within budget. We will identify the core cost in the delivery of telecoms assets with attention to station information and surveillance systems. We will target efficiencies in technology and delivery, and drive lower unit rates and whole life cost reductions to deliver increased volumes within a sustainable budget for CP7.

LNW-OPS	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
CP6 entry (forecast)	67	60	54	49	42	37	32	33	33	40
CP5 entry (forecast 2013)	60	56	50	47	61	57	51	47	43	50

LNW-SISS	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
CP6 entry (forecast)	75	66	56	48	41	35	36	33	27	31
CP5 entry (forecast 2013)	69	65	59	56	60	60	55	59	57	59

The average percentage life remaining sustainability measure captured within the DST shows that current CP5 exit is less than forecast but this position is recovered by the end of CP6. SISS CIS management, GSMR BTS's are key factors in the lower life remaining for CP6. The age profile of the transmission nodes will also reduce through CP6.

Safety

To maintain safety performance at the highest level affordable within CP6, we will monitor changes in financial requirements and manage the asset portfolio in accordance with established safety risk management principles. Delivering a reactive infill programme in CP6. Roll-out of GSM-R cab mobile fitment V.4 already in progress and there shall be no increase in risk of failure to meet LTIFR, by monitoring accident and injury rates, and to further improve our safety culture and identify opportunities to improve safety performance throughout the telecoms estate.

Telecoms - 2 of 3



09:22	STALYBRIDGE	3	On Time
09:23	LONDON EUSTON	2	On Time
09:25	LIVERPOOL LIME ST	4	09:30
09:28	MANCHESTER PIC	3	On Time
09:28	CLEETHORPES	0	On Time
09:28	MANCHESTER PIC	4	On Time
09:30	CHESTER	2	On Time
09:35	BOURNEMOUTH	2	On Time
09:35	HAZEL GROVE	0	On Time

Page 2 of 3

Asset Performance at the end of CP6

Performance

The investment identified over the control period is designed to maintain the CP5 exit figures for train performance. There are opportunities to drive further performance improvements however investment is primarily targeted at maintaining systems' stability utilising an efficient level of investment. The migration of legacy and third-party services onto a single network will support performance through network resilience and supportability.

The Telecom Asset Management Policy provides guidance on the approach to asset resilience and associated criticality. This guidance has been reflected into the Telecoms Decision Support Tool (DST) and the tool has been utilised to drive the renewals work bank. The key elements that have been prioritised within the plan are summarised below:

- Power support systems have been prioritised to maintain operational continuity in the times of national operator failure. A battery strategy is in the process of being developed to drive power support in line with system and geographical needs. This will drive a sustainable position for this asset base
- Operational telephony will progress with a combination of site renewals in line with the development of a central core that will facilitate flexibility, efficiency and resilience
- Sustained investment into lineside infrastructure and level crossing telephony will deliver improvements to availability of the service and support resilience. Known hotspots will be targeted alongside the evaluation of the complete system and support at level crossings
- The migration from third party services to our own telecoms infrastructure will be undertaken to deliver greater resilience at level crossing locations
- The migration from legacy services to our own telecoms infrastructure will be undertaken to drive to a single supportable, scalable and sustainable network environment.

Maintenance delivery

We are experiencing unprecedented change in terms of requirements, access restrictions and technology development within the telecoms industry which subsequently pose significant maintenance challenges.

These challenges require the adoption of new maintenance approaches, changes within processes, organisational alignment, tools and training. We will use lean based techniques to develop new maintenance delivery methods based upon lowest whole life cost for each asset type.

The maintenance and renewal strategy will be based on a predict and prevent regime with effective team working with all stakeholders. At the heart of this strategy are the people and processes and the development with route maintenance teams is key. We have a three-strand approach to delivering our maintenance strategy:

- Task standardisation and improved collaborative working
- Reliability centred maintenance and renewal regimes based on improved asset knowledge and intelligence
- Use of technology to predict faults and to ensure deployment of the right solution for each task.

Route policy

Our CP6 strategy continues to focus on providing the route with telecoms capability, infrastructure and services which enable the safe, secure and efficient operation of the railway, and also increasingly focusses on the growing importance to deliver better passenger connectivity. It also supports Network Rail's strategic business plans such as delivering an always connected digital railway for customers, passengers and lineside neighbours. It is our intention to continue driving service-based outcomes rather than individual asset performance. We will support ETCS infrastructure schemes including ensuring enabling telecoms are delivered to meet enhanced ETCS requirements for Digital Railway.

Our strategy has been designed to help our key customers (the routes) to provide more reliable and available services to their customers, the Train Operating Companies (TOCs), Freight Operating Companies (FOCs) and ultimately, passengers. Our strategy also caters for the unprecedented demand for communications connectivity along the rail corridor which needs to be managed consistently to ensure best value is achieved for everyone.

Telecoms - 3 of 3



Interventions

The Telecoms Asset Management Policy provides clarity of direction on the Asset Intervention Strategy. This is summarised below.

Asset Intervention Types

Three key intervention types will be used to provide services to our customers, mitigating the effects of the asset's degradation and failures. These are monitoring, inspection/maintenance, and replacement/renewal.

- **Monitor** - Check that equipment meets the defined performance thresholds by checking the asset by automated management systems or direct observation. If the performance threshold is breached or failures are detected, secondary intervention or remedial action such as rectify or periodic service is required to restore service.
- **Inspect (predict) and maintain (prevent)** - Check that equipment meets the defined performance thresholds by periodic visual and physical activities including tests and measurements, restoring (service) performance to defined thresholds if within expected levels. Maintenance can be at hardware or software level.
- **Replacement and renewal** - Replacing or renewing components or systems with serviced or repaired spares or new purchase. Three types of renewal or replacement are available:
 - Full system renewal generally comprises the system itself and the supporting equipment, containment and structures. Project management, design, testing and commissioning are included in the package.
 - Targeted renewal is the renewal/replacement of a component part of a system such as a monitor/display or camera where there is a little or no requirement for design work and minimal testing and project management.
 - Maintainer swap-out is replacement of equipment as part of the normal service/system rectification activity, generally using the Telecommunications Maintenance Testing & Failure Investigation (TMT&FIP) Process.

Renewals are supportive of known operational changes and implement technologies that will form enablers to many of the requirements for the route projects delivering operational change. A summary of the key operational asset groups are summarised as follows:

- Transmission will be provided by a single supportable network by the close of CP6. Legacy transmission systems will be migrated over the duration of the control period and where operational efficiencies can be identified, third party supplier provisions will also be migrated to the single network
- GSM-R will continue to be the single operational radio network in England and Wales. Scotland will continue to utilise a mix of GSM-R and RETB for track-to-train communications
- Driver Only Operation (DOO) despatch systems will be renewed to support the operational requirements of the routes and associated TOCs. The introduction of new rolling stock with on-board systems is a key consideration in the creation of the core investment scenario
- Level crossing telephony forms a key part of the core scenario with a plan to maintain asset renewals and support the development of product/technology improvements.
- Enabling telecoms for ETCS infrastructure schemes for FTN and GSM-R will be delivered to meet enhanced ETCS requirements

10.6. Property strategy

Team LNW works collaboratively with Network Rail Property and uses strategic property and town planning advice together with associated property acquisitions and transactions to support the delivery of operational maintenance, renewals and enhancements on LNW Route, currently with particular support and emphasis on:

- East West Phase 2
- Close out actions relating to North Western Electrification Programme, East West Phase 1, and the Ordsall Chord
- Cumbrian coast
- Development of freight facilities
- Routine maintenance and renewals activities
- Office strategy with reference to Manchester Square One offices lease expiry and HS2 requirements

Continued focus in CP6 will be on engaging with NR Property and planning projects at an early stage to ensure that appropriate delivery strategies can be put in place to enable them to be delivered efficiently. Early engagement will allow joint planning around the delivery of projects via Transport & Works Act Orders, Development Consent Orders or other agreed delivery methodologies.

Land Strategies

We will develop detailed land strategies with NR Property that help inform the optimum use of land potentially realising additional benefits, such as better operational facilities, the release of commercially developable land, bringing underutilised assets back into use for the benefit of the community and offering opportunities to lever in third party investment. Team LNW, with the System Operator and NR Property, will continue to build on the good record of LNW Route in attracting inward investment to the business (such as through developer contributions e.g. Birmingham New Street/Grand Central – see Section 8.4 above), making best use of relevant expertise and experience in commercial activities and initiatives particularly for station and network enhancements.

We have recently refreshed a survey of our land holding to help identify business development opportunities and inform future sales decisions. An example of such opportunities is the joint LNW/NR Property master plan which is proposed for Watford Junction station in conjunction with Watford Council.

*Watford Junction
master plan
footprint*



The Council has a special interest in the station as Planning Authority with influence over the development of adjacent sites and the creation of new vehicular access to the station. The master plan will seek to address the major improvements that have been identified to meet forecast demand at this location.

Disposals and Income Generation



Team LNW and Property working together will help to fund Network Rail's Railway Upgrade Plan by selling assets not core to operations and seeking to release surplus railway land for housing to achieve Government targets. All sites that are being considered for disposal will be assessed to ensure operational uses can be protected, and where possible, enhanced. Land disposals are also

underway where it presents a liability to the Network Rail to reduce costs. We are also looking to work more collaboratively with FOCs and TOCs to identify joint development and disposals which benefit the industry through reduced costs or enhancing passenger experience.

As regards income generation, we are working collaboratively with NR Property to maximise income opportunities at our stations through sale of further advertising space or provision of exhibition facilities.

Workplace management

Using our devolved Workplace Management team supported by NR Property our office accommodation will adhere to the Government Property Unit targets of 8 m² per full time employee (FTE) and agility ratio of 7 desks to 10 FTE. This applies to the corporate estate but does not extend to Control Centres or Depots. By driving towards these targets, Team LNW will work its corporate estate more efficiently and realise OPEX savings where feasible.

In addition, we are working with NR Property on the development of “City Strategies” to look at all land and workplace properties held by all Network Rail divisions in a particular location, with a view to optimising occupation and releasing land for sale or early cessation of lease costs where possible.

Euston Station

The new HS2 terminal at Euston will impact the conventional station by reducing the footprint and number of platforms available for services on LNW Route. Accordingly, we have created the *Redevelopment of Euston Conventional Station (RECS)* project to explore options for Euston station following the completion of HS2 Phase One, and to set out a clear plan for any temporary works in the shorter term.



*Euston station
phasing*

HS2 will reduce the platforms and area of the conventional station by approximately one third. The high speed station will also increase the demand for interchange capability at Euston. There is a case for the RECS project in terms of addressing current issues at the station including insufficient passenger capacity, ageing assets and poor user experience as well as planning for future drivers such as passenger growth, interchange requirements and continuing operations. Additionally the RECS project provides opportunities to support regeneration of the wider Euston area.

The RECS project is developing the business case for Euston using the HM Treasury Green Book - 5 Case Model. Development and design will continue in CP6 and major works are expected to commence in CP7 following the completion of HS2 Phase One.

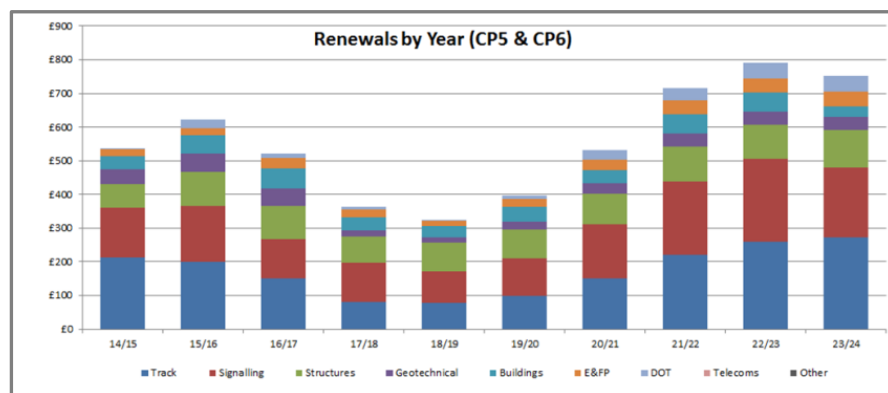
Other HS2 property issues

NR Property are working on the transfer of land from Network Rail to HS2 in accordance with the agreements between Network Rail and HS2 Limited as well as ensuring LNW Route's operational requirements are protected to maintain safe working of the railway. The team work along the length of the project managing over 750 land parcels, as well as the compensation claims that are associated with each section of land.

11. Delivery strategy

11.1. Summary route deliverability statement

We have assessed the deliverability of our plans and we consider our track, signalling, structures and buildings renewals proposals deliverable as they are of similar or smaller volumes than CP5 and we can utilise existing supply chains. We have also reviewed the likely step changes between the end of CP5 and the commencement of CP6 that this plan requires and the profiling of expenditure over CP6. We have received assurance from our delivery partners and supply chain that they are both achievable.



Key areas of delivery to be addressed include E&P, earthworks, drainage and off track renewals. We have either constrained the increased expenditure to a level we consider deliverable in CP6 or reviewed delivery approaches to give better confidence of expected outcomes. We also plan to deliver the increased maintenance volumes proposed for CP6 by a combination of recruitment to address previously unresourced drainage and off track maintenance and better use of existing resources through use of Activity Based Planning and other analytics.

11.2. Renewals delivery approach

We recognise that to realise our delivery efficiencies based on stable workbanks, integrated access planning, robust change control etc, we need to upgrade our approach to clienting renewals in CP6. Our first step has been to assemble our asset strategies, workbanks, maintenance volumes etc into our developing LNW Information management System (IMS) (See Section 7.9 above) to provide analytics for interactive visualisations of work types, locations, deliverer allocations, spend profiles, etc. This has enabled us to give our delivery teams and supply chain visibility of our renewals workbanks for CP6 and plan their strategies accordingly. As part of this we have moved to annualised workbanks for renewals to promote early definition, lock down of budget and opportunity for innovation by the supply chain.



In parallel, we have regularly consulted with our delivery partners, considered the likely market conditions in CP6, especially with HS2 under full construction, used feedback from reviews of current delivery arrangements and lessons learnt, and have allocated all items within our CP6 workbanks to appropriate deliverers. These include Infrastructure Projects, LNW Route Works Delivery, other NR delivery options (e.g. Infrastructure Construction & Engineering (ICE) or to trial a direct contracting approach for contestable schemes.

We have worked closely with Infrastructure Projects to take a detailed review of our renewals delivery arrangements. We reviewed lessons learned from CP5 and analysed the CP6 workbank profile to develop a clear set of objectives aimed at improving Safety, Deliverability and Financial performance in CP6. We have developed a list of Process and Terms & Conditions changes required to deliver these objectives and these have informed updates of local frameworks and discussions as regards national frameworks in track, signalling and other assets. We have also continued some existing renewals delivery arrangements into CP6 to minimise the impact of the transition between Control Periods and of any delays in establishing alternative arrangements.

In all of the proposed delivery options we are building in the principles of ensuring alignment, integration and collaboration between delivery partners and the establishment of robust management approaches to monitor and drive the efficiencies and changes required to deliver our plan successfully.

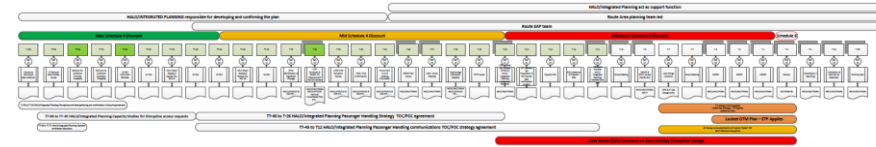
As part of our assessment of the deliverability of our plans, we have reviewed the workbank definition, key resource availability, access requirements, cost confidence and certainty of deliverer for all asset renewals activities across CP6. In addition we have reviewed the ramp up in activity from Year 5 of CP5 into Year 1 of CP6 and assured ourselves that this will be deliverable.

11.3. Project Delivery strategy

11.3.1. Access

It is recognised that access is a key factor that influences a range of strategy areas (e.g. timetabling, project delivery, maintenance etc.) and that is closely linked to the relationship with the customer. We anticipate access becoming a more scarce resource in CP6 as the duration of train operation increases, freight increasingly need 7 day operation on key corridors, and total shutdowns become less palatable.

We have trialled several initiatives in CP5 to integrate delivery of infrastructure works in conjunction with our customers and have learnt key lessons which we will apply to our approach in CP6. In particular, we will establish robust governance arrangements for the planning and delivery of works requiring access and commence dialogue with affected operators as soon as possible. We have also included benefits from the Safer Faster Isolations programme, particularly as regards enabling greater working time during possessions on electrified lines.



With the complex portfolio of works including major third party enhancements such as HS2 and East West Rail, planned for CP6, access requirements will increase throughout Control Period. If not managed effectively the scale of work has the potential to cause unprecedented levels of disruption to Route operations. An updated governance approach is currently being developed to collate, integrate, control and communicate access requirements across enhancement, renewal and third party activity in order to provide support to the overall delivery of the portfolio. This will include deploying across our entire Route the approach we have used with HS2 for strategic access planning and the ability to address capacity planning, passenger handling, cross-route conflicts etc in advance of the formal access planning process timescales.

11.3.2. Supply chain capability

Throughout 2018 we have been communicating with our deliverers and their supply chain regarding our plans for CP6. This has included holding two workshops with suppliers in January and November 2018, outlining what we will do to improve delivery confidence and demonstrating how we will give them visibility of our workbanks and plans through the LNW IMS, and giving opportunity to ask us direct questions. In conjunction with the better visibility of our proposals and the greater certainty of expenditure, our supply chain has confirmed their ability to deliver our outputs. This has been enabled by our work on contracting arrangements that either continue into CP6 or have been recently established to enable CP6 works to commence in a timely manner.

11.3.3. Works Delivery capability

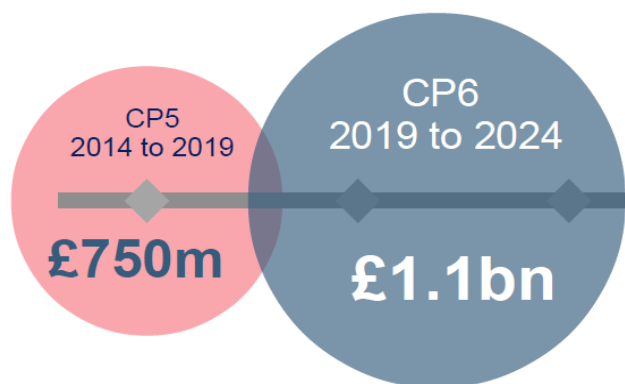
The primary objective of our Works Delivery organisation is to deliver the CP6 renewals workbank in the safest and most efficient means using our own people and our supply chain. The two key challenges for Works delivery in CP6 are improving its safety performance to contribute to the objective of lowering our LTIFR to 0.17 by the end of CP6 and increasing its capacity to deliver increased levels of work.

Safety Performance

Wherever possible, best practice from both internal colleagues and the wider industry will be adopted appropriate to the type of work and suppliers Works Delivery uses. We are working closely with our supply chain to seek increased certainty of safe delivery through sharing learning and best practice as well as increased mechanisation of works to minimise risk of manual handling injuries. Works Delivery holds a Principle Contractor License and continues to work to standardise the approach to CDM across the teams through best practice documentation and engineering support.

Increasing capacity

The level of expenditure through our Works Delivery organisation is increasing in CP6.



Forecast increase in LNW Works Delivery turnover

To achieve this, we are expanding our Works Delivery organisation. We have commenced a recruitment campaign supported by a Human Resources Shared Services campaign team, robust reporting and tracking, as well as a dedicated Resourcing Business Partner. The intent is not to only grow the capability of Works Delivery by the recruitment of more projects staff to manage a larger supply chain but also to recruit resources to directly undertake works as appropriate. This campaign is being tracked as part of our CP6 readiness and will continue into the early part of CP6.

11.3.4. Route Services

Network Rail's Route Services organisation supplies us with the services we decide are best provided from a national team. This approach enables national co-ordination and for Network Rail to benefit from economies of scale and greater efficiency from specialised delivery. Route Services consists of four primary functions. **Supply Chain Operations** (SCO) delivers the logistics, materials, components and fleet that enable the maintenance and renewal of our railway infrastructure. **IT** shapes, builds and runs the technology services needed to support our railway, now and into the future. **Business Services** manages and delivers support services on our behalf such as shared services, and training, and **Contracts and Procurement** (C&P) secures and manages the national contracts and supplier relationships which we rely on.



*High Output
ballast
cleaning on the
West Coast
Main Line*

In LNW Route, we work most closely with the Supply Chain Operations team in Route Services, both in terms of developing our long term strategy and business plan, and also jointly focussing on the regional delivery of key services to our asset management and operational teams. We have shared our CP6 plans with SCO, confirmed the deliverability of the volumes we propose both in terms of materials and plant such as On Track machines, and incorporated the efficiency plans of SCO into our overall efficiency strategy for CP6.

We also liaise regularly with our key contacts within IT and Business Services, and we are collaborating with Route Services C&P to develop a devolved operating model for end to end category strategy, to optimise national economies of scale with local empowerment. We include senior members of the Route Services leadership team within our Route Executive, and also our key functional meetings, and feel that Route Services is a trusted deliver partner. This allows us to both influence and benefit from the Route Services Transformational workstreams, including increased efficiency and Route choices, and the benchmarking and commercialisation of services. As such, our strategic business plans are closely aligned, with some specific areas of efficiency and opportunity identified, including the introduction of rail milling to reduce the re-railing requirement, and the joint planning of tamping in order to minimise the number of machines required, and maximise their utilisation.

11.4. Wheeled Plant strategy



Wheeled Plant represents a portfolio of assets that play a significant role in our maintenance and renewal activities. Whilst responsibility for the portfolio is spread across the business, the majority of assets are managed within Route Services (RS) – see Section 11.3.4 above.

Route Services provides us with wheeled plant services which are best provided from a national team. Collaboration has taken place with Route Services with respect to these services to align our requirements for CP6 with the service provision provided.

We have increased demand for both plain line and S&C stoneblowing due to the proven improved track geometry outputs and the associated durability of the improvement. This is mirrored nationally and therefore capability to meet the additional national S&C demand will not be available in the first two years of the control period whilst new multipurpose machines are sourced by RS to replace life expired plain line machines. We will need to prioritise stoneblowing resources and where appropriate undertake alternative treatment in the meantime.

Rail Milling is being introduced as a refurbishment treatment to reduce the volume of re-railing required in CP6. The introduction of rail milling will complement the grinding train plan, which will continue to manage the rail following rail changing or milling.

New rail grinding trains procured by Route Services



We are not utilising the High Output Track Renewals (TRS) System on LNW Route in CP6, as following many campaigns on the West Coast Main Line, parts of the track have significant asset life within them, therefore to renew with TRS would mean changing assets at sub-optimal timescales.

Seasonal treatment from the fleet of specialist rail vehicles forms a key part of our commitment to making our infrastructure resilient to the impact of the weather conditions. It is anticipated that our demand in CP6 will be broadly similar to today with a focus on reliability of supply.

Tamping and ballast regulating activity will increase in CP6, both as an efficiency to enable a reduction in renewals, and also in response to the increasing use of Plain Line Pattern Recognition (PLPR), which requires more precise ballast profile and distribution.

The recent tender for the new tamper and ballast regulating contracts saw us and RS co-ordinating to align fleet capability with requirements including the renewal of two machines in 2021 with high output multipurpose machines with DTS (dynamic track stabilization) capability in order to increase productivity and improve outputs (handback speeds).

11.5. Maintenance strategy

11.5.1. Access

Our approach for maintenance access to the track in CP6 includes a combination of possession and red zone working. We will undertake maintenance activities in line blockages with additional protection where possible but will still use red zone working on quieter lines. This approach will be further developed, reviewed and monitored by our Safer Track Access Programme Board. The Board will focus on the following key improvement projects:-

- Line Blockages
- Controlled Access to the Track
- Standard 019+
- Electronic Safe Work Packs

The will also address the following compliance / enabling projects:-

- Implementation of LOWS / SATWS
- Introduction of Safer Track Side Working through deployment of LEWIS, Remote Disconnection Devices (RDD) and ZKL3000RC.
- Working on Gradient (Risk of Runaways)
- Safety Critical Communications

This will enable us to achieve one of our key objectives for CP6 which is to abolish the Victorian means of providing warning with flags as the sole method of protection for our workforce and reduce the risk from on-coming trains.



*Tandem tamping
at Bletchley*

11.5.2. Maintenance capability

We have actively worked with the STE Head of Maintenance organisation to develop our maintenance strategy for CP6. Our strategy is designed to increase maintenance effectiveness and efficiency and eight areas of strategic focus have been identified to improve maintenance delivery as follows:-



1. Define and clarify accountability for all aspects of maintenance, ensuring line of sight to corporate objectives
2. Progress enhanced asset condition monitoring and analytics to predict and prevent asset failure
3. Continue to implement risk-based maintenance (RBM) regimes
4. Produce activity-based maintenance business plans
5. Increase maintenance work planning capability to optimise cost, time and quality of maintenance delivery
6. Engage customers and stakeholders to agree the trade-off between maintenance access and train services
7. Make our people pivotal to planning, delivery and reviewing maintenance and provide them with the necessary tools, skills and competence and become a learning organisation through sharing best-practice and structured continuous improvement
8. Move to Predict & Prevent maintenance regimes and maximise the benefits from the deployment of Intelligent Infrastructure

Our updated management structure has facilitated clearer accountabilities between the Route functions, in particular Asset Management and Maintenance Delivery, and we will build on the improved effectiveness be better deliver in CP6. The increased data analytics capability that we have established will drive through improvements and efficiency to maximise the use of intelligent infrastructure and risk based maintenance.



Activity Based maintenance planning has been embedded into our maintenance organisation and has facilitated effective costing of our maintenance tasks. This is allowing better scenario planning of maintenance to test the effect of business planning variables and a better understanding of the trade-offs. It is also enabling enactment of maintenance accountabilities through clear linkage of the volumes and cost which will drive effective client monitoring and review.

Through increased planning capability and opportunities for work integration being visualised and understood, including the opportunity for benchmarking between different Delivery Units, we will drive efficient delivery and maximise the output quality. In addition, empowering our people to identify waste and inefficiency in the maintenance delivery processes and then implement improvements through the LEAN programme will be an ongoing focus through CP6. We will work with the national Intelligent Infrastructure programme to progress the opportunities identified and maximise the benefits realised on LNW Route. We will also continue to develop the LNW Maintenance Management Working Group which brings together all the stakeholders for maintenance delivery to identify risks and opportunities and provide a focus for structured continuous improvement.

11.6. Operations strategy

In CP6 we will focus on the following operational issues:-

Control Systems

Throughout CP6 we will continue the development of our control systems, both for signalling and electrical systems, and we will work with the Digital Railway team to explore opportunities to deliver benefits to LNW Route and our customers (see also Section 10.4).

Areas we intend to develop include:-

- Automatic Route Setting/Dynamic Route Setting
- Platform Docking and TTP Editor
- Traffic Management
- SCADA updates for Electrical Control Rooms and migration to ROCs
- Scalable IECC at Sandhills



Incident Management

We recognise that effective incident management is a key element of minimising delays per incident and delivering great performance, and accordingly will pursue the following approach in CP6 in partnership with our operator colleagues:-

- Continue to develop robust contingency plans and review at each timetable change
- Test the plans on a regular basis with all stakeholders
- Adopt incident management tool giving benefits to control and TOC/FOC teams
- Explore opportunities for further co-located Control teams
- Develop and enhance NR Mobile Operations Managers suite of competencies

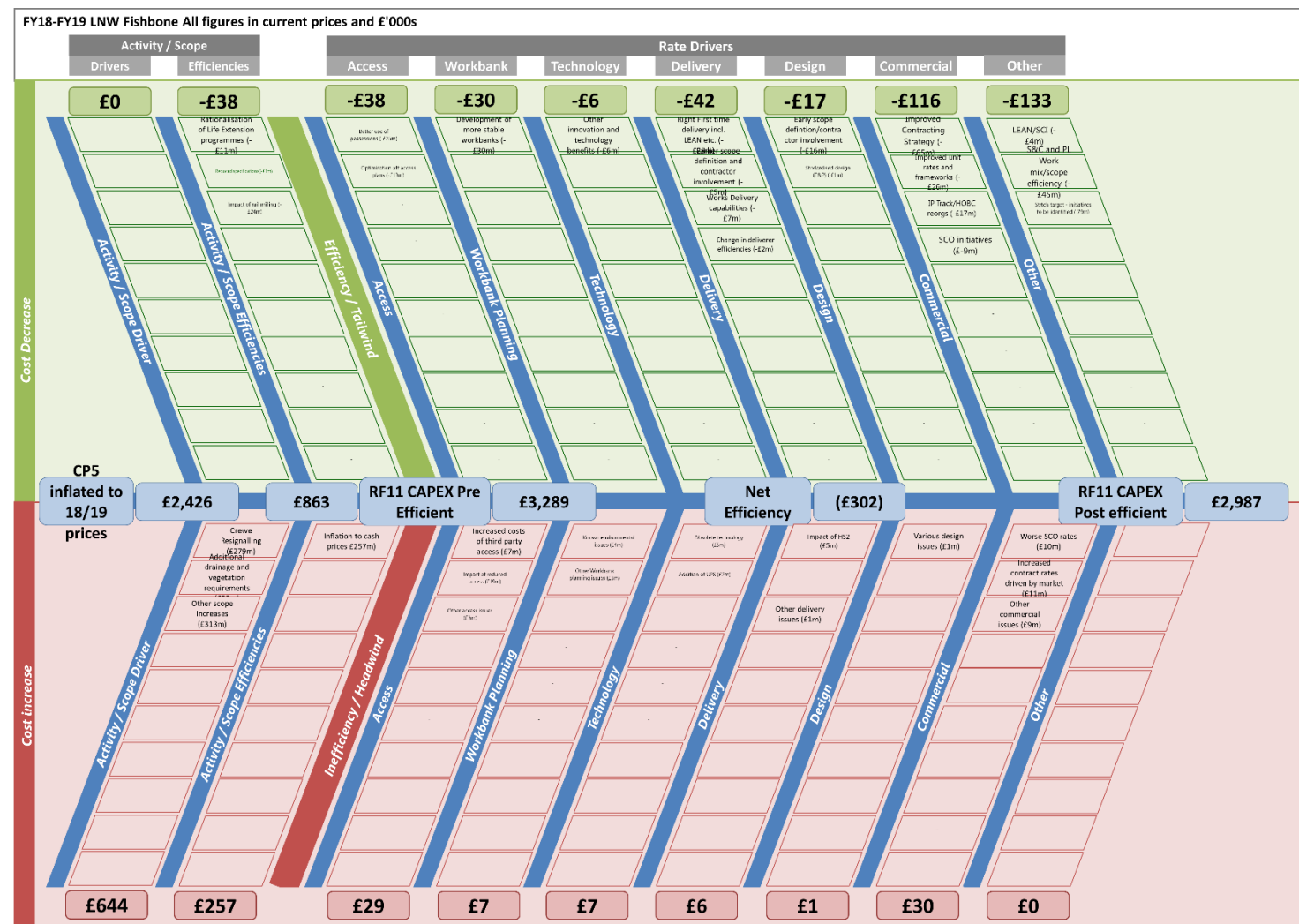
Staff Competence

As part of our continuous improvement approach for CP6, we will also aim to develop our staff competencies and culture in the following ways:-

- Explore possibilities for combined future roles – Signaller/Controller/Shift Signaller Manager particularly at West Midlands SCC
- A training and development programme that makes our operators highly skilled, engaged and competent
 - Look at ways of challenging and improving our current operating rules to safely aid performance

12. Headwinds and efficiency

Capex fishbone



[illegible]

13. Risk and uncertainty in the plan

	Unit of Measure	CP5 (£m)	CP6 (£m)						CP7 (£m)	
		18/19	19/20	20/21	21/22	22/23	23/24	CP6	24/25	25/26
Risk funds	£m	0	15	58	83	103	142	401	n/a	n/a

This section sets out our estimate of the degree of financial uncertainty within our plan.

Pre-efficient costs in our plan are based on ‘current rates’ but include any additional scope needed to deliver the outputs in the plan. We have used 2018/19 unit rates to develop our capital expenditure forecasts and CP5 exit rates for support, operations and maintenance expenditure forecasts. Drivers of rate increases (headwinds/inefficiencies), or rate reductions (efficiencies/tailwinds), where there is a reasonable expectation they will occur, have been identified separately from the core CP6 plan.

The combination of our core CP6 plan, headwinds/tailwinds and efficiencies/inefficiencies is our ‘submission’ and represents the ‘most likely outcome’ for CP6. However, it excludes any funding for financial risk that sits in our plan.

Whilst it is difficult to precisely estimate the likelihood of delivering our plan in CP6, we suggest that, overall, there is a 45% to 55% likelihood of the outputs in the plan being delivered for the forecast cost in our CP6 plan (i.e. our plan is set at around P50). This means that approximately half of the time, we will be able to deliver our plan for the forecast cost. However, financial uncertainty varies between expenditure categories. For example, we consider that there is significantly more uncertainty in our renewals plan than in the support, operations and maintenance plans in CP6. Our analysis also shows that there is significantly more financial uncertainty in later years of the Control Period.

Figure 13.1, below, presents our estimate of the overall range of financial uncertainty across our income and expenditure for CP6. It also identifies the main drivers of the uncertainty ranges. The information in this table is based on route analysis of the financial uncertainty in support and operations, maintenance and renewals costs, and income. The spot values in Figure 11.1 include headwinds/tailwinds and efficiencies/inefficiencies. The financial uncertainty ranges represent our assessment of the outturn income and expenditure that could occur in 95% of scenarios in CP6.

We also include in Appendix E our current Level 2 (L2) risks as assessed through our risk management process. We regularly review our L2 risks at our quarterly Business Assurance Committee (BAC). These meetings form part of our business management performance meetings where risk and assurance information is reviewed. We are also reviewing our approach to risk management and have identified a CP6 Strategic Initiative (see section 2 above) entitled ‘Create a risk management improvement programme’. A copy of the initial action plan for this initiative can be found in Appendix D.

Figure 13.1: CP6 financial uncertainty ranges

Area	Potential range (low – spot – high)	Summary of key drivers of the uncertainty range	% of range	
		Driver of range	Lower %	Upper %
Renewals		Deliverability of forecast efficiencies, particularly in track which accounts for £76m of the upper limit and is highly dependent on contract re-negotiation	23%	46%
		Weather and other serious incidents, particularly in Earthworks due to the risk of landslide events	16%	1%
		Cost of supplier and contractor costs - Supplier contracts are uncertain with Infrastructure Projects having a retendering process after year 2	14%	16%
		Changes in policy and practices e.g. asset policies, fatigue management or new standards - Working at height for OLE and drainage compliance standards	9%	0%
		Understanding of maintenance and/or renewals work banks - Most assets are now at 80% remitted and deliverers are fairly mature in their understanding of workbanks	8%	11%
Maintenance		Deliverability of forecast efficiencies. A worst and best case scenario analysis has been conducted to determine level of uncertainty	62%	81%
		Weather and other serious incidents - Potential need for spend to save initiatives for performance mitigation	18%	0%
		Understanding of maintenance and/or renewals work banks - Non-Delivery of Works Delivery remitted Maintenance (Vegetation) & Increased Reactive Maintenance/CEFA works	13%	9%
		Availability of access - Acceleration of Controlled Access to the Track Initiative into FY20 or slipping into FY22	5%	5%
		Cost of supplier and contractor costs, particularly uncertainty on subcontractor rates following IR35 legislation amendments	2%	4%

Area	Potential range (low – spot – high)	Summary of key drivers of the uncertainty range	% of range																									
		Driver of range	Lower %	Upper %																								
Support and operations	<table><thead><tr><th>Year</th><th>Low</th><th>Spot</th><th>High</th></tr></thead><tbody><tr><td>2019/20</td><td>167</td><td>168</td><td>174</td></tr><tr><td>2020/21</td><td>171</td><td>174</td><td>180</td></tr><tr><td>2021/22</td><td>173</td><td>177</td><td>185</td></tr><tr><td>2022/23</td><td>178</td><td>184</td><td>195</td></tr><tr><td>2023/24</td><td>181</td><td>188</td><td>201</td></tr></tbody></table>	Year	Low	Spot	High	2019/20	167	168	174	2020/21	171	174	180	2021/22	173	177	185	2022/23	178	184	195	2023/24	181	188	201	Additional station security implemented above QX agreed levels and additional trespass prevention staff	10%	50%
		Year	Low	Spot	High																							
		2019/20	167	168	174																							
		2020/21	171	174	180																							
2021/22	173	177	185																									
2022/23	178	184	195																									
2023/24	181	188	201																									
Risk of increased Autumn Treatment rates in line with CP5 levels (above inflation)	10%	30%																										
Relocation from Manchester Square One office at end of current lease as part of HS2	0%	15%																										
Deliverability of forecast efficiencies, including delays in ROC migrations etc	20%	5%																										
Income	<table><thead><tr><th>Year</th><th>Low</th><th>Spot</th><th>High</th></tr></thead><tbody><tr><td>2019/20</td><td>294</td><td>353</td><td>357</td></tr><tr><td>2020/21</td><td>313</td><td>403</td><td>409</td></tr><tr><td>2021/22</td><td>306</td><td>405</td><td>415</td></tr><tr><td>2022/23</td><td>318</td><td>424</td><td>437</td></tr><tr><td>2023/24</td><td>363</td><td>461</td><td>478</td></tr></tbody></table>	Year	Low	Spot	High	2019/20	294	353	357	2020/21	313	403	409	2021/22	306	405	415	2022/23	318	424	437	2023/24	363	461	478	Trespass and Fatality Management (Schedule 8)	29%	5%
		Year	Low	Spot	High																							
		2019/20	294	353	357																							
		2020/21	313	403	409																							
		2021/22	306	405	415																							
2022/23	318	424	437																									
2023/24	363	461	478																									
Major Asset Failures (Schedule 8)	27%	5%																										
Changes in Renewal Phasing or Enhancement/Renewal split.(Schedule 4)	10%	0%																										
Non-Delivery of Timetable Changes (1 year delay in delivery etc)	7%	0%																										
Adverse Weather [Heat, Flooding, Autumn etc] (Schedule 8)	7%	0%																										

14. CP6 income and expenditure

This section sets out our latest forecast of expenditure and income for CP6, and also how our forecasts compare to the assumptions ORR made in calculating our CP6 route funding settlement. Consistent with ORR's PR18 final determination, the tables in this section include route-incurred, and allocated, expenditure and income.

CP6 expenditure forecast

In Table 12.1, below, we provide our latest CP6 forecast of expenditure. The forecast, below, will act as the baseline against which ORR measures financial performance in CP6.

Table 12.1: CP6 expenditure forecast

£m in cash prices	19/20	20/21	21/22	22/23	23/24	Total	Other	CP6
Support	13	13	11	13	12	63	625	688
Operations	155	161	166	171	176	830	18	847
Maintenance	413	428	442	454	466	2,203	80	2,284
Renewals	466	593	711	659	558	2,987	718	3,704
Schedule 4 & 8	98	47	95	86	59	385	75	460
EC4T, industry costs and rates	0	0	0	0	0	0	898	898
System Operator						0	96	96
GPF: route	0	27	39	50	82	199	0	199
GPF: contingent asset management	15	31	44	53	60	203	0	203
GPF: centrally-held						0	223	223
Total costs	1,162	1,299	1,509	1,487	1,413	6,869	2,733	9,601

In calculating the route funding settlement for CP6, ORR made assumptions about our costs. Table 12.2, below, compares our CP6 business plan expenditure forecasts with ORR's PR18 final determination assumptions.

Table 12.2: Business Plan vs. Final Determination expenditure assumptions

£m in cash prices	CP6 Business Plan			Final Determination			Variance		
	Route	Other	CP6	Route	Other	CP6	Route	Other	CP6
Support	63	625	688	22	572	594	-40	-54	-94
Operations	830	18	847	999	23	1,022	169	6	175
Maintenance	2,203	80	2,284	2,114	144	2,258	-90	64	-25
Renewals	2,987	718	3,704	2,960	682	3,642	-27	-35	-62
Schedule 4 & 8	385	75	460	379	0	379	-7	-75	-81
EC4T, industry costs and rates	0	898	898	0	957	957	0	59	59
System Operator	0	96	96	0	73	73	0	-23	-23
GPF: route	199	0	199	165	0	165	-33	0	-33
GPF: contingent asset management	203	0	203	237	0	237	34	0	34
GPF: centrally-held	0	223	223	0	238	238	0	15	15
Total costs	6,869	2,733	9,601	6,875	2,689	9,565	6	-43	-37

Please note: ORR's PR18 final determination did not separately identify the costs allocated to routes from route-incurred costs. However, the table, above, identifies allocated costs based on underlying information from ORR's analysis.

The Route's CP6 business plan remains broadly in line with the final determination, with major variances being driven by changes in accounting structures within Maintenance, Operations and Support. Renewals expenditure has increased following reclassification of Buildings Minor Emerging Works from OPEX to CAPEX. Risk funding has remained in line with the final determination, with variances driven by changes in accounting structure.

CP6 income forecast

The expenditure in Table 12.1 needs to be paid for. In Table 12.3, below, we provide our latest CP6 income forecast. Our charging income forecast reflects our latest forecast of CP6 traffic levels and is consistent with final CP6 price lists.

Table 12.3: CP6 income forecast

£m in cash prices	19/20	20/21	21/22	22/23	23/24	Route	Other	CP6
Variable charges (VUC, EAUC)	-60	-67	-71	-73	-75	-346	0	-346
Stations LTC	-66	-67	-68	-70	-71	-342	0	-342
EC4T	0	0	0	0	0	0	-553	-553
Schedule 4 ACS	-51	-44	-71	-65	-64	-294	-110	-403
FTAC	-194	-190	-207	-214	-216	-1,022	-184	-1,205
Network Grant (SOMR)	0	0	0	0	0	0	-4,784	-4,784
Income from FNPO	0	0	0	0	0	0	-1,413	-1,413
Other single till income	-65	-67	-69	-71	-73	-345	-325	-670
Income within scope of PR18	-436	-435	-486	-493	-498	-2,348	-7,370	-9,718

Please note: Government grants for corporation tax, financing costs, BT Police costs and enhancements were not agreed as part of ORR's final determination so we have not included them in our forecast of income.

*Other represents the route allocation of national function income.

In calculating the route funding settlement for CP6, ORR made assumptions about the amount of income we will receive from charges and other income. Table 12.4, below, compares our CP6 business plan income forecasts with ORR's PR18 final determination assumptions.

Table 12.4: Business Plan vs. Final Determination income assumptions

£m in cash prices	CP6 Business Plan			Final Determination			Variance		
	Route	Other	CP6	Route	Other	CP6	Route	Other	CP6
Variable charges (VUC, EAUC)	-346	0	-346	-388	0	-388	-42	0	-42
Stations LTC	-342	0	-342	-343	0	-343	-1	0	-1
EC4T	0	-553	-553	0	-582	-582	0	-28	-28
Schedule 4 ACS	-294	-110	-403	-379	0	-379	-85	110	25
FTAC	-1,022	-184	-1,205	-1,085	0	-1,085	-63	184	120
Network Grant (SOMR)	0	-4,784	-4,784	0	-4,765	-4,765	0	19	19
Income from FNPO	0	-1,413	-1,413	0	-1,413	-1,413	0	0	0
Other single till income	-345	-325	-670	-306	-304	-611	39	21	60
Income within scope of PR18	-2,348	-7,370	-9,718	-2,500	-7,064	-9,565	-152	305	153

Variable income has reduced in line with latest traffic forecasts for Virgin West Coast and Transpennine Express. Schedule 4 ACS has been aligned to TOC agreed values, following post Final Determination agreements.

15. Sign-off

This document and accompanying templates are owned by the Route Managing Director of LNW Route.

Submission of this document indicates confirmation that:

- all appropriate level 1 assurance activities have been undertaken;
- the RMD is satisfied with the quality, currency and appropriateness of the content of this document as well as the cost, volume and activity projections to which it refers;
- the signatories are satisfied that the plan has been assessed as deliverable, subject to the assumptions articulated in Appendix B.

Authorised by:

Signed 

Martin Frobisher
Route Managing Director

Date 8/2/19.

Signed 

Nicola Dean
Route Finance Director

Date 8/2/19

Signed 

James Dean
Chief Operating Officer

Date 8/2/19.

Signed 

Carole Bayliss
Director, Route Asset Management

Date 8/2/19.

Signed 

Andy Gent
Regional Director, Infrastructure Projects

Date 8/2/19

Appendix A Stakeholder Engagement

1. Scope and Methods of Engagement

a. Who are our stakeholders?

Key Train Operators	Other Train Operators	Freight Operators	Passenger Transport Executives	National and Local Government, and Industry Groups	Others
Virgin West Coast West Midland Trains Chiltern Railways Merseyrail Transpennine Express Northern	Cross Country Transport for Wales East Midlands Trains Caledonian Sleepers Arriva Rail London GTR Southern Great Western Railway West Coast Railway Alliance Rail London Underground	Freightliner DBCargo Direct Rail Services GB Railfreight Colas Rail	Transport for London West Midlands Rail Executive Transport for Greater Manchester Merseytravel	Department for Transport Transport for the North Rail North Midlands Connect County Councils City Councils City Regions Local Authorities Rail Delivery Group Transport Focus	ORR Passengers HS2 Limited Community Rail Groups Lineside neighbours Local Enterprise Partnerships RMT/ASLEF/TSSA British Transport Police Highways England Suppliers

b. How have we engaged with our stakeholders?

We have engaged with our stakeholders in two ways – through our business as usual contacts and with engagement specifically for CP6 planning. Business as usual engagement has been as follows:-

Topic	Engagement approach	Route lead	Stakeholders involved
General	Level 1 meetings Alliance Boards Management Boards Customer Account Management	RMD	All LNW key TOCs and all PTE's on LNW Route HS2 Limited
Performance	Performance Strategy Groups Performance Councils Performance Assurance Groups TSR conferences	HoP&CRM	All LNW key TOCs
Network improvements and changes	Quarterly RIRG meetings Enhancement scheme Boards and delivery group meetings	PSP RMD/RDD	All operators HS2 Limited
Access Planning	Access Planning process	Head of Planning	All operators
Timetable planning	Via System Operator	PSP	All operators
Stations & depots	Local Delivery Groups	DRS	All SFOs
Cross-Route	Joint Level 1 meetings Multi-Route Alliances Joint working with FNPO team Access planning workshops	RMD	Operators

We have engaged with our stakeholders specifically on planning for CP6 in the following manner:-

CP6 engagement approach	Route lead	Frequency	Purpose	Recipients/invitees
Draft CP6 Plans circulated	CP6 lead	2017 – January, June & December 2018 – February (SBP)	To give visibility of current proposals and enable questions to be raised	As workshops
Stakeholder workshops – industry stakeholders	RMD	Annually since January 2017; joint with FNPO	Share progress to date, key strategies and proposed outputs, and allow discussion and feedback on our proposals	All operators, funders and Passenger Transport Executives
Stakeholder workshops – non-industry stakeholders	RMD/PSP	Annually since June 2017; joint with System Operator		Funders, local authorities, county councils and Local Enterprise Partnerships
Stakeholder surgeries	HoP&CRM	First held in 2018	Address pre-supplied questions on specific topics of concern to stakeholders with subject matter experts (RAMs etc)	All operators
1:1 meetings on CP6	CP6 Lead	Meetings held on ad-hoc basis from October 2016 onwards	Identify stakeholder priorities and outline timeframes and steps for the CP6 planning process	All operators
Supplier workshops	RMD/DRAM	Two held to date; January & November 2018	Outline objectives for renewals delivery in CP6 including efficiencies and safety performance and seek feedback on preparations for CP6	80+ suppliers across our renewals portfolio
Route Investment Review Group meetings	CP6 lead	Every three months since early 2017	Share updates on CP6 planning, discuss priorities to be addressed, and explain trade offs	All operators
Agenda items at Level 1 meetings, Alliance Boards etc	RMD etc	Varied		Key operators, Passenger Transport Executives and ORR
Performance workshops	RPM	Periodic in 2018	Jointly develop performance trajectories for CP6	Key operators
CP6 access planning workshops & process	Head of Planning	Bi-annually to suit engineering access planning process	Develop access plans and mitigations (passenger handling etc) for CP6 renewals and maintenance activities	All operators

Where refranchising has been undertaken during the engagement process, we have invited franchise bidders to workshops and included details of our CP6 proposals as part of the franchise data room.

We have had excellent engagement from our stakeholders with workshops being well attended and productive. We trialled a stakeholder surgery in mid-2018 to allow access to our subject matter experts. This proved a great success and we will repeat this in 2019. Most of our key operators now have their priorities captured formally and are regularly updating them to feed into our annual update of our business plan. It has been a challenge to engage with the wider stakeholder groups as our plans are only for operations, maintenance and renewals activities whereas most external stakeholders are primarily interested in enhancements and other improvements or changes. We have therefore developed an approach to engage with these stakeholders jointly with System Operator colleagues who can discuss wider issues of interest.

2. Outcomes of engagement

a. What are our stakeholder requirements?

Customer	Prioritised needs	Extent can be addressed
DfT	Deliver capacity improvements to time and budget	Will be part of the CP6 Enhancements Delivery Plan
	Accommodation of train paths specified in franchises	In recent franchises, more paths than the infrastructure can reliably accommodate have been specified and hours of operation have increased. The latter will impact on white period durations used for maintenance
	Delivery of performance levels for franchises	Our view on likely performance levels that are deliverable in CP6 in the context of the scale of expenditure outlined in this plan and the events and changes forecast over the Control Period are included in Section 3
	Support delivery of HS2	Fully accommodated with regards to HS2 whilst impacts on LNW Route continue to be better defined and mitigated. We will also integrate HS2 activities with our planned works to better co-ordinate access and supply chain requirements
ORR	Deliver outputs	CP6 plans and outputs agreed as part of the PR18 process
Train & Freight operating companies	Deliver improved customer service	We have structured our vision and plan for CP6 with this as one of our top priority items
	Achieve agreed performance targets	Joint strategies with each operator to allow appropriate targets to be set and realistic plans to be implemented. Our proposed forecasts for CP6 are included in Section 3
	Minimise DPI	
	Invest in stations	Within this plan, our ability to invest beyond Long Term Charge levels is limited. However, we have increased our minor works and reactive maintenance budgets for stations to better address faults and other issues in CP6. Station improvements are an area of key focus for our 'Open for Business' activities
	Improvements with renewals	Opportunities for improvement and addressing pinchpoints will be explored wherever possible in conjunction with our stakeholders. Examples includes Birmingham New Street Resignalling in which we will raise the departure speed from 10mph to 15mph as part of the renewal scheme in CP6 and investigations into the PSR on Knightcote embankment.
	Reduce journey times	
	Address pinchpoints and other non-condition asset issues	
	Train planning resources	Ongoing discussion with capacity planning teams to support the provision of further resource
	Cross Route liaison	We have expanded our access and logistics team to encompass the whole Route and to address cross route and diversionary issues in advance of national access planning timescales. See Section 11.3.1
	Availability of diversionary routes	By NRT and covered in their plan for CP6. A summary is included in Section 10.3 above
	SISS at stations	We have adopted this stakeholder priority as part of this plan and are transferring the Worcester area to LNW Route in CP6. See section 6.7 above
	Transfer Worcester area to LNW Route	
	Replace ATP system on the Chiltern lines	This has been included in our proposals - see Section 7.10 above
Passengers	Improved passenger handling during disruption	Building on our arrangements with HS2, we have included this as an aspect in our revised access and logistics team activities in CP6 across all of LNW Route as described in Section 11.3.1
PTEs and local authorities	Deliver better stations and Improve network capacity	Our plans for expenditure at stations have been developed in conjunction with the station operators and we will continue to seek additional funding for improvements

b. How have we prioritised stakeholder needs?

We have had to balance a range of priorities when deciding what to undertake in CP6 and allocate our expenditure. Our prioritisation methodology can be summarised as addressing the following aspects in this order:-

1. Safety & compliance
2. Performance & resilience
3. Asset sustainability
4. Improvements & betterments

Within the context of constrained funding this greatly limits our opportunities to respond to the majority of stakeholder priorities other than day to day operations and safety. Our plan therefore is very much about maintaining the safety and capability of the current LNW Route infrastructure, reducing asset failures and their impacts and, wherever possible, seeking betterment when undertaking renewals.

We have used our established decision support tools, assessment procedures, traffic forecasts, and route criticality to assess suitable workbanks and approaches. This allows us to apportion works between different lines in a fair and transparent manner. In several cases our proposals have also been developed in conjunction with stakeholders; station minor works and renewals being a notable example.

We have used the same approach when considering stakeholder needs and accommodated those where we can, as detailed above and in the early sections of this plan. We have not included stakeholder priorities that were mutually incompatible or that were beyond the scope of operations, maintenance and renewals. A key area which we have decided needs to be managed through regular processes and not itemised specifically in this plan is the planning of track access for our works. We have implemented an upgraded approach to discussing and agreeing access requirements (see Section 11.3.1 above) to try to accommodate the wide ranging and differing requirements of our various operators, and therefore have not itemised the different priorities that we have received from different operators in this regard.

Finally, we have also not adopted the franchise performance trajectories of several of our operators as we have developed evidence based forecasts that we consider our infrastructure can support within the context of known events in CP6. This is explained in more detail in Section 6.5 above.

c. How do stakeholder priorities link to our short and long-term route objectives?

Throughout this document we have identified known stakeholder priorities and to what extent we can address them. Our Long Term Scorecard in Section 3 reflects many stakeholder measures as objectives for us to achieve in CP6. Our performance against these will be monitored and the outcomes will impact our team's performance ratings and objectives.

- Safety and Compliance
- Performance and Resilience
- Asset Sustainability
- Improvements and Betterments

3. Ongoing engagement

Our ongoing engagement will be shaped by the outcomes of our strategic initiative to 'Create a business planning improvement programme' (See Section 2 and Appendix D) as part of the continuous business planning approach now being adopted whereby we update our business plan annually with a rolling eight year horizon. However, whilst this is under development we have also been discussing future engagement with stakeholders and our proposals are:-

Stakeholder group	Ongoing engagement approach
Industry stakeholders (Operators, funders etc)	Continue to discuss business planning at 1:1 meetings, RIRG and other forums to collect updated stakeholder priorities Circulate draft business plan update in May containing proposals for discussion Hold workshops in July of each year to encourage debate and feedback Hold surgeries in July to encourage more targeted questions and discussions Updated plan circulated in November ORR Route Level Meetings as part of Route regulation in CP6
Non-Industry stakeholders (Local Authorities, County Councils, LEPs etc)	Circulate draft business plan update in May containing proposals for discussion Hold joint workshops with the System Operator in September of each year to encourage debate and feedback Updated plan circulated in November
Supply chain	Hold targeted workshops for delivery areas to remind of objectives, monitor progress, and encourage engagement
Other stakeholders not included above	Continue to discuss business planning at appropriate meetings to collect updated stakeholder priorities Circulate draft business plan update in May to encourage feedback Updated plan circulated in November

Appendix B Key assumptions

Ref no.	Topic (e.g. access, deliverability, climate etc.)	Assumption	Areas of spend impacted (e.g. all opex, track renewals, all spend etc.)
1	Access	For this plan, we have assumed white periods remain broadly the same as CP5 but that securing disruptive access will become more challenging. Where additional services are then proposed by TOCs that reduce access, the impacts will be addressed on a case by case basis. Train Planning, Informed Traveller timescales and general timetabling approaches are assumed to stay as CP5	OPEX
2	Internal devolution	Further devolution of services from the Centre will be cost neutral	ALL
3	Route boundary changes	Route boundary changes will either be at no additional cost to LNW Route or that additional budget will accompany any boundary changes to cover any additional administration, organisational and other costs arising	ALL
4	Centrally provided services	Centre will continue providing services such as NMT etc to the same extent as provided in CP5	ALL
5	Telecoms	We have assumed that all telecoms operations, maintenance and renewal costs borne by NRT will continue to be centrally funded by NRT as in CP5 and have not included any provisions in our plans for CP6. We have included route telecoms maintenance costs as per our workforce and telecoms remains embedded within the Signalling Equivalent Unit rate and enhancement programmes as in CP5 and have not included any other provisions in our plans for CP6	ALL
6	Digital Railway	We have assumed that Digital Railway interventions will not occur on any LNW Route signalling assets in CP6 and have planned on the basis of conventional signalling interventions and ETCS-ready specifications where appropriate to sustain the signalling assets	Signalling
7	Organisation	We have planned on the basis of the current organisation structure and that recharging methodologies continue throughout the planning period	ALL
8	Railway industry devolution	We have assumed the railway industry remains as presently structured and have not included for any impacts of proposed station devolution to PTEs or similar	ALL

Ref no.	Topic (e.g. access, deliverability, climate etc.)	Assumption	Areas of spend impacted (e.g. all opex, track renewals, all spend etc.)
9	Deliverability	We have assumed that our renewals and maintenance activities will be deliverable within the context of HS2 works, supply chain capacity, possession access, and traffic growth	ALL
10	Weather	Our plan is dependent on there not being an increase in extreme weather events in CP6 compared to CP5 and that costs for work arising from extreme events will be funded from the Centre or be recoverable	Renewals
11	Estimates	We have assumed that the supplied unit rates etc we have based our forecasts upon will be achievable	ALL
12	Enhancements	In developing our renewals and maintenance workbanks, enhancements have been treated as possible overlays and should any renewals schemes fall in the same geographic footprint, then we will integrate them into the enhancement and supply the equivalent financial contribution. This excludes Crewe where we have allocated a cash contribution of £270m within this plan	ALL
13	CP5 exit	Our plan assumes that the CP5 forecast volumes as of RF8 are achieved	ALL
14	HS2	We have assumed that HS2 will happen in CP6, the Euston mitigation measures will be adopted, and that the HS2 On Network Works will be funded by others. Our forecasts and risk profiles reflect our assessment of the resultant impact on our activities and operations	ALL
15	Refranchising	We have not included provisions for additional requirements arising from franchises to be re-let in CP6 (e.g. higher performance targets) as these are currently unknown	ALL
16	ESD programme	This will continue to be funded by the Centre in CP6 enabling the benefits of safer, faster isolations to be realised	ALL
17	Contract negotiations	Local market conditions and local construction inflation do not hinder renegotiation of contracts and aspired improvements to T&C's	Renewals
18	Land access costs	HS2 land access negotiations do not set unrealistic precedents for our land requirements for renewals etc	Renewals
19	Risk funds	Central provisions will be available should risks materialise that incur costs over and above the levels we can fund from our Route risk provision	ALL

Appendix C Route context

This appendix includes two tables. The first outlines the key challenges for LNW Route in CP6 as below, whilst the second overleaf highlights key risks to our forecast performance trajectories referenced in Section 3 and their likely timing and duration.

Challenge	Description	Impacts
Increased utilisation of the network	Growth of usage of the rail network will continue in CP6 resulting in more trains operating, services running for longer hours (including 24 hour operation) and more passengers and freight being carried	<ul style="list-style-type: none"> • Increase of maintenance and renewal activity to sustain performance and availability • Additional infrastructure to maintain as more assets are added to the network • Reduction in access time for infrastructure works, necessitating changed work methodologies and organisation size • Increased risks at interface points e.g. level crossings, stations etc
HS2	During CP6, HS2 will be constructing their Phase 1 route from Euston to Birmingham and northwards to the WCML connection at Handsacre Junction, with a possible extension (Phase 2A) to Crewe	<ul style="list-style-type: none"> • Impact on capacity and performance during HS2 enabling works on the south end of the WCML, especially at Euston and Birmingham • Train paths and rolling stock required for HS2 tunnelling spoil removal from central London and the Chilterns • Significant infrastructure works required in CP6 to accommodate the HS2 services that will commence running over NR infrastructure north of Handsacre Junction in CP7 • Effect of HS2 activity on other LNW Route activities including supplier capacity, resource availability, staff retention etc
Deliverability	The scale of potential rail industry works in CP6 to accommodate growth, combined with HS2 reaching full delivery on Phase 1, will constrain the ability to deliver works	<ul style="list-style-type: none"> • Competition for scarce resources and equipment • Availability of access and impacts on rail services and local communities • Timescales for consents required
Network Rail Devolution	Further development of the Route's capability to manage devolved activities from Centre and to be accountable for Enhancements spend	<ul style="list-style-type: none"> • Definition of service provision by Centre to the Routes • Revised management and governance structures required at Route level • Business planning assumptions to be captured • Improve assurance approach following establishment of Route SRP
Regional Devolution	Greater influence on transport by devolved and local bodies such as Transport for the North, TfGM etc	<ul style="list-style-type: none"> • Rolling stock and service pattern changes driven locally • Potential changes to station management and maintenance • Northern Powerhouse proposals
Climate Change	Forecast and address impacts of changing weather patterns	<ul style="list-style-type: none"> • Contribute to Asset Policy updates using Route knowledge and experience • Complete mapping of drainage assets and assessments of adequacy • Update flood risk assessments and identify vulnerable structures/earthworks etc • Promote carbon reduction
Asset Information	Further improve knowledge of assets and understanding of sustainability issues	<ul style="list-style-type: none"> • Identification of remaining unknown assets, especially in Drainage and Off Track • Management of long term issues with electrification and signal structures • Improve data capture from maintenance to facilitate better planning and costing
Preparation for CP7	Adequacy of planning and development activities in CP6 to prepare for CP7	<ul style="list-style-type: none"> • Introduction of continuous business planning • Alignment of development of enhancement proposals with Periodic Review process

The table below highlights the key risks to our forecast performance trajectories referenced in Sections 3 and 6 and their likely timing and duration as follows:-

Key Performance Risks	CP5		CP6						Operator Impacted							
	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Chiltern	Virgin West Coast	West Midlands	Merseyrail	TPE	Northern	Cross Country	Freight operators
HS2 works and mass haul traffic on and alongside LNW Route, Euston capacity restrictions, and relocation of Willesden HOOB, Euston DU and Saltley DU									✓	✓	✓					✓
HS2 development work - Platforms 17/18 at Euston										✓	✓					
Crewe Hub - CP6 Construction works										✓	✓			✓	✓	✓
New Fleet - Northern (End CP5) & TPE (end CP5/early CP6)													✓	✓		
New Fleet - Merseyrail from summer 2019 - late 2020 with a new timetable in 2021												✓				
Birmingham Resignalling										✓	✓				✓	
Ageing infrastructure and declining asset performance									✓	✓	✓	✓	✓	✓	✓	✓
May 2018 Timetable Change													✓	✓		
May 2019 Timetable Change										✓	✓				✓	✓
Dec 2019 Timetable Change - Major change for Chiltern									✓							
West Midlands Trains New Fleet - • New fleet 350/4 – on Euston – Crewe – Liv from Dec 19 • Cross city – new fleet (29 x 5 car) 2020/2021 • “Long distances services” – new fleet (5 x 16 car) 2020/21											✓					
West Midlands Trains - New Fleet and similar IR issues to other operators										✓	✓					
Completion of Northern Programmes & Dec 2019 Timetable Change									✓	✓	✓	✓	✓	✓		✓
Virgin Fleet Issues – Interior refurbishment programme throughout CP6 – Potential loss of trains										✓						
CP5 Roll Over Issues – New Fleet inc. Northern 319 Flex and May 18 Timetable Change inc.													✓	✓		
Ongoing impact associated with external incidents including trespass and fatalities									✓	✓	✓	✓	✓	✓	✓	✓
Transpennine Route Upgrade													✓	✓		✓
East West Rail - Western Phase 2									✓	✓	✓					✓

Appendix D Action Plans for Strategic Initiatives

As outlined in Section 2, we have developed twenty strategic initiatives to support the implementation of our plan. These are:-

Safety	1	Create an enhanced safety improvement programme - "Everyone Home Safe, Every Day"
	2	Create an enhanced assurance regime linked to risk management
	3	Create an Environment & Sustainability Excellence programme
One Team	4	Create a diverse, caring & inclusive culture underpinned with the right behaviours
	5	Create an organisational capability and development programme
	6	Develop the capacity and capability of Works Delivery to ensure delivery of the agreed CP6 capital programme
Brilliant Service for Customers	7	Create a programme to deliver excellent customer service
	8	Programme to deliver Customer CP6 performance trajectories
	9	Work within ISO44001 (Collaborative Working) framework
	10	Develop an Integrated Transport Planning Approach
	11	Communications campaign - internal, industry, lineside neighbours, public
Sustainability & Asset Management	12	Seek ISO55001 (Asset Management Standard) certification
	13	Develop & implement Supply Chain improvement programme
	14	Adopt & extend Structured Continuous Improvement - "Better Every Day"
Brilliant Service for Taxpayers	15	Deliver and track CP6 cost efficiency programme
	16	Create a business planning improvement programme
	17	Create a risk management improvement programme
	18	Support & deliver the Enhancements needed to accommodate passenger and freight growth
	19	Grow external investment in LNW (including "Open for Business")
Delivering HS2 Integration	20	Deliver HS2 Integration

Each strategic initiative has had an Action Plan developed by its Route Exec Owner and copies are included below.

A3-T

PROPOSED TEAM CHARTER

THEME : Create an enhanced Safety Improvement Programme: Everyone Home Safe Every Day

OPPORTUNITY / PROBLEM STATEMENT

- The visions for LNW Route safety and health has line of sight to the Network Rail corporate visions, of:
 - Everyone Home Safe Every Day and
 - Everyone Fit for the Future
- The scope of the strategy covers 3 discrete areas:
 - Workforce Health & Safety (Accidents, Trackside Protection, Ill Health, Health & Wellbeing & Safety Culture)
 - Passenger Safety (passenger train accident risk and stations including PTI)
 - Public Safety (Level Crossings & Route Crime inc trespass and fatalities)

Across all areas whilst the overall trend is decreasing we continue to see harm to our workforce, passengers and members of public.

PROPOSED ACTIONS

- Workforce** - To remove lookout flags as the sole method of protection, to improve compliance to 019, to continue with the Electrical Safety Improvement Plan to achieve Safer Faster Isolations, to deliver a Lost Time Injury Frequency Rate (LTIFR) of 0.17 at the end of CP6 and have better identification and management of ill health risks i.e. fatigue. This will be achieved by projects structured around our 6-point strategy: Safety Leadership, Track Worker Safety, System Safety, Risk Management & Assurance, Health & Wellbeing, Environment & Sustainability.
- Passenger** - To reduce the opportunity for passenger accidents at each managed station, each will have a bespoke plan to reduce the risk of accidents and platform train incidents (based on the industry approved PTI risk assessment tool).
- Public** - All level crossings will have completed narrative risk assessments and plans to implement controls on a risk based approach. Additionally, a strategy will be in place to introduce secondary warning systems at our passive level crossings i.e. where whistle-boards are the sole form of protection.
- Public** - A Route plan will be implemented which reflects the Rail Industry Suicide Stakeholder Group (RISSG) industry 9-point plan and a programme to identify and implement innovative engineering solutions at stations to prevent public access.
- Public** - A joint performance & safety Route crime strategy will be delivered with agreed hotspots and appropriate use of the LNW route toolkit. All education establishments within 500m from the railway on LNW will receive some form of railway education.

ANALYSIS

Workforce accidents as measured by the LTIFR is showing a 35% reduction at the end of CP5 since 2016/17 however is significantly higher than other comparable industries and our internal Infrastructure Projects (IP) colleagues. The most common causes of accidents continue to relate to Slip/trip/falls, Manual Handling, Contact with objects and road traffic events.

Workforce track protection as measured by an Operational Close Call and/or near miss with a train is showing a steady state since 2016/17.

Workforce ill health cases continue to arise however measurements vary with data available for Hand Arm Vibrations (HAVs) and mental health absence but is limited for indicators such as respiratory, noise, fatigue.

Safety culture maturity is not yet quantified for the Route. national analysis undertaken against the Keil model of safety culture maturity shows the CP5 position as being at a 'directing' state on the 5 point model.

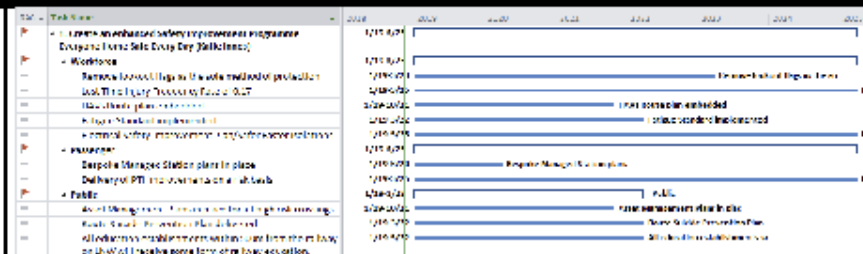
As passenger growth continues and with an increase in the number of train services grow, there is a need to prevent passenger accidents. In CP5 there is an average of 68 PTI incidents per year across all 4 Managed on the Route.

As level crossing Narrative Risk Assessments (NRAs) are completed by the end of CP5 we are gathering a better understanding of our risks and using the output of these to drive our programme of works.

Public fatalities in particular, suspected suicides, continue to be a nationwide challenge. The number of fatalities across the route has decreased from 2015/16 however in year 5 of CP5 the number is beginning to steadily increase. Additionally, with the increase in train services and passenger numbers the performance consequences are compounded.

Route crime, particular trespass on the line has seen a 21% increase over the last 2 years of CP5 and 50% increase in performance delays (1 in 5 minutes from 1 in 7.75 minutes in 2015/16). Additionally, the approach to manage crime is disparate.

IMPLEMENTATION PLAN



TARGET STATEMENT

- A Route where our workforce are unlikely to suffer harm either as a result of an accident, interface with a train or diagnosis of an ill health medical condition.
- Aim at the end of CP6 to eliminate the use of lookout flags as the sole means of protection and Lost Time Injury Frequency Rate (LTIFR) of 0.17
- Continual reduction of the risk from a derailment and collision and plans in place for all managed stations and platforms to reduce the opportunity for passenger accidents.
- An Asset Management Plan for all level crossings, plans in place to implement controls on a risk based approach and have secondary warning systems in place at our passive level crossings i.e. where whistle-boards are the sole form of protection.
- Plan in place which reflects the Rail Industry Suicide Stakeholder Group (RISSG) industry 9 point plan and a programme to identify and implement appropriate engineering solutions at stations to prevent public access to the line
- Route crime strategy in place supported by a joint performance & safety plan, agreed hotspots and use of a LNW toolkit. All education establishments within 500m from the railway on LNW will receive some form of railway education, we currently have 6000 establishments within 500m of a railway line.

CHECK AND ACT (Verification & Follow-up)

- Delivery against a suite of targeted KPIs will be monitored on a periodic basis though CP6

DATE : November 2018

REPORTING UNIT : Health, Safety, Environment & Quality

A3-T

PROPOSED TEAM CHARTER

THEME : Create an enhanced Assurance Regime linked to Risk Management

OPPORTUNITY / PROBLEM STATEMENT

There is currently no assurance model within the LNW Route that defines clear accountabilities and responsibilities with regards to assurance. This has led to inconsistencies within understanding and application of current assurance mechanisms, gaps in coverage, varied and low Efficacy of existing assurance products and despite increasing amount of time and resources being spent on initiatives the business safety and operational performance remains a concern.

Risk and assurance are currently managed as two separate components and there is very limited visibility as to how the assurance activities undertaken relate to the risks.

Development and implementation of IMS within NR presents an opportunity to align our assurance activities to the key processes and controls. This is also a system requirement for integrated Management System (IMS) and other ISO standard implementation that form part of LNW Strategic Business Plan for CP6.

PROPOSED ACTIONS

- Implement and embed the agreed assurance model;
- Develop system capability to record, track and monitor outputs of assurance activities;
- Support functional contacts to develop an implementation plan to achieve those objectives, with a view of identifying key functional controls, assurance arrangements;
- At strategic level work with Group risk and Route business risk team to build assurance within already established risk management tools i.e. ERR's, risk logs, etc;
- Develop assurance maps for strategic L2 risks;
- Collaborate with Route Integrated Risk Manager to embed risk and assurance as one concept by rolling out updated risk and assurance management tools; and
- Provide Route Exec an annual report of current control environment based on assurance activities to aid RM3 assessment.

ANALYSIS

- There are on average 12 expired TV's, 45 overdue defects, 42 overdue audit actions from various assurance activities due every week in LNW. These overdue KPI'S highlight a risk that has not been mitigated and could lead to an event that could affect Business performance.
- There are currently 238 controls documented in LNW L2 Enterprise risk records. 76% of control effectiveness is via self-assessment with no clear understanding and intelligence of assurance activities behind the self-assessment.
- There were two improvement notices issued to LNW Route in 2018, which highlight lack of assurance on effectiveness of controls;
- There are no mechanisms to identify and link assurance activities to controls that manage risks.

IMPLEMENTATION PLAN

Task Name	2017	2018	2019	2020	2021	2022	2023	2024
10. Create an Enhanced Assurance Regime linked to Risk Management (Katie Innes)	4/18-6/21							10. Create an Enhanced Assurance Regime linked to Risk Management (Katie Innes)
Develop a proposal for LNW exec of the intended assurance framework for LNW Route	4/18-12/18							Develop a proposal for LNW exec of the intended assurance framework for LNW Route
Resource the assurance team as per the framework		2/19-7/19						Resource the assurance team as per the framework
Agree with exec the resourcing requirements for the assurance model		2/19-4/19						Agree with exec the resourcing requirements for the assurance model
Take the IDRC for the identified roles		3/19-4/19						Take the IDRC for the identified roles
Interview and recruit identified roles		5/19-7/19						Interview and recruit identified roles
Implement and embed assurance framework		7/19-11/19						Implement and embed assurance framework
Develop a risk based audit plan for the Route		7/19-11/19						Develop a risk based audit plan for the Route
Seek DAC approval at Dec DAC for the proposed audit plan		12/19-12/19						Seek DAC approval at Dec DAC for the proposed audit plan
Consult STT to Develop a system capability within CMC to record, track and		8/19-8/20						Consult STT to Develop a system capability within CMC to record, track and
Implement and embed assurance framework		12/19-3/21						Implement and embed assurance framework
Develop ToR for the audits within 1st Quarter		12/19-8/20						Develop ToR for the audits within 1st Quarter
Deliver Audits as per the plan		3/20-3/21						Deliver Audits as per the plan
Assurance Manager to present an annual control assessment for LNW Route		3/21-5/21						Assurance Manager to present an annual control assessment for LNW Route
Identify the key points of contact for assurance within functions with accu		1/19-1/19						Identify the key points of contact for assurance within functions with accu
Advise, guide and support each point of contact to develop assurance prod		1/19-1/19						Advise, guide and support each point of contact to develop assurance prod
Work with Group risk and Route Business risk team to develop assurance co		9/18-9/18						Work with Group risk and Route Business risk team to develop assurance co
Develop assurance maps for LNW Strategic risks		1/19-2/20						Develop assurance maps for LNW Strategic risks
Once the capability for assurance has been built into LNW's, develop an as		1/19-2/20						Once the capability for assurance has been built into LNW's, develop an as
support risk managers in identifying and developing assurance mechanis		1/19-2/20						support risk managers in identifying and developing assurance mechanis

TARGET STATEMENT

Our strategy is to continuously improve business performance by embedding a standardised approach for managing operational risks and assurance activities.

In LNW, we aim to :-

- Develop and embed an assurance framework for LNW Route that meets the needs of a devolved Business by end of year 3 CP6;
- Have a structured and consistent governance for all levels of risk and assurance activity throughout CP6;
- Understanding of who, what, when and why in terms of assurance arrangements;
- A mature culture towards risk and assurance.

CHECK AND ACT (Verification & Follow-up)

- Reduction in no. of NCR's, regulatory notices, other assurance actions;
- Audits completed to schedule once a plan has been approved by BAC;
- Route level progress to be reviewed at Route PBR and L2 BAC
- Measure the implementation via local assurance KPI's within each function;

DATE : 12th November 2018

REPORTING UNIT : Priti Patel - Director Safety, Environment and Quality

A3-T

PROPOSED TEAM CHARTER

THEME : Create an Environment & Sustainability Excellence Programme

OPPORTUNITY / PROBLEM STATEMENT

In CP5 it has been identified that there is a risk of failure to identify, understand and manage environmental issues (including energy, carbon emissions and future changes in climate) leading to environmental damage and associated safety, performance, reputational and financial impacts.

LNW Route is presently reactive in its approach to compliance with some environmental legislation and management of risk to the environment from its activities. As a result, our activities could cause long term damage to aspects of the environment i.e. depletion of resources, impact to biodiversity and pollution of air, land and water. Many of the company standards that specify requirements for environmental management and guidance to deliver against high level company policy are outdated or are not realistically achievable for route businesses. Consequently, we have no continuity from high level policy setting through to successful delivery.

Whilst LNW route plans and delivers work safely, the planning process does not commonly consider and mitigate against risk to the environment. The result is that environmental constraints such as presence of protected species can become a 'show stopper' leading to delays in delivery of planned works.

There are positive financial outcomes from better managing certain environmental risks. For example, reduction in energy use or avoidance of landfill tax. Such opportunities should be explored to offset increases in services costs and to realise cost efficiencies.

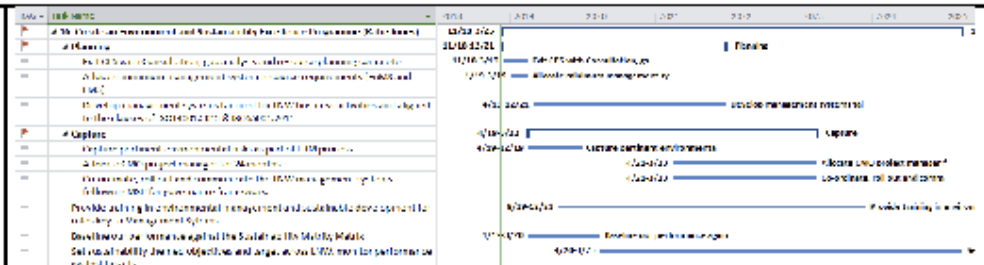
PROPOSED ACTIONS

- Capture pertinent environmental and social risks as part of ERM process and assure that the LNW business structure is appropriate to deliver management of risks
- Agree and consult an LNW Policy Statement to set our commitments towards sustainability as part of our operational management to guide staff in carrying out business strategies, plans and activities.
- Engage and set science-based targets for parts of the business whose activities contribute to Environment and Social Risks, and/or who could be influential to realising sustainability opportunities
- Develop management systems (EnMS and EMS) tailored for LNW business activities and aligned to the clauses of ISO14001:2015 and ISO55001:2011.
- Co-ordinate, roll out and communicate the LNW management systems following MSP for governance framework.
- Provide training for parts of the business whose activities contribute to Environment and Social Risks, and/or who could be influential to realising sustainability opportunities, set objectives and targets for improvement of aspects relating to sustainability.
- To embed sustainability into the core of our business, through knowledge, engagement, collaboration and innovation. Transparent reporting on sustainability strategies, goals and accomplishments

ANALYSIS

- Corporate audit April 2017 : Reporting and Management of Non-Compliance with Environmental Legislation found that:
 - o There is a lack of accountability and reporting to demonstrate national compliance to environmental legislation
 - o Environmental Standards are not adequate in supporting compliance with environmental legislation
 - o There are weak controls to interpret and communicate applicable environmental legislation and changes to these.
- Corporate audit October 2016: Electrical Energy Consumption and Carbon Targets
 - o There is a lack of accountability at the exec and route level for managing electrical energy and carbon targets
 - o There is a lack of knowledge sharing on energy and carbon management across and between routes, centre and 3rd parties.
- Negative media response from vegetation management works and 2018 petition to 'stop chopping down millions of trees' - approximately 50% of environmental category complaints received by the contacts and communities team in CP5 relate to vegetation management
- Our 2017/18 route electricity use has increase over 9% compared to CP4 Exit Baseline and over 12% compared to 2016/17 total end of year usage.
- Our waste recycling figures are falling i.e. 38% CP5 Yr 1 to 36% CP5 Yr 4
- Workforce competence records (needs ref from ORACLE training uptake) - lack of formal training for our LNW employees.
- A number of Cat 1, Cat 2 incidents in CP5 which have resulted in environment damage and/or legal expenses

IMPLEMENTATION PLAN



TARGET STATEMENT

On LNW we aim to be :

- Compliant to environmental legislation as a minimum standard (zero non-compliances against legislation)
- Managing risks to the environment in line with Enterprise Risk Management (ERM) principles
- Achieving the maturity matrix score in line with 'Proactive' for management of sustainability related risk
- compliant to ISO 55001 - Asset Management Maturity Models require 'an enduring, balanced approach to economic activity, environmental responsibility and social progress to ensure all Asset Management activities are sustainable in perpetuity'
- Operating an Environment Management System (EMS) aligned to the clauses of ISO14001:2015 as per our Network Rail Environment Policy
- Operating an (Energy Management System (EnMS) aligned to the clauses of ISO55001:2011 as per our Network Rail Energy Management Policy

CHECK AND ACT (Verification & Follow-up)

Check:

- % Score on the Network Rail Sustainability Maturity Matrix (Improvement measured from CP6 baseline Yr 1)
- AMEM Risk and Review sub-section rated as effective on the Maturity Scale (45-75% compliance)
- Compliance to the clauses of ISO14001:2015 and ISO55001:2011
- ERM Process for review
- Management System Annual Review

Act:

- Actions would be generated from management system review and tracked through annual SHE Plans.

DATE : 13th November 2018

REPORTING UNIT : Priti Patel: Health, Safety, Environment & Quality

A3-T

PROPOSED TEAM CHARTER

THEME : Create a diverse, caring & inclusive culture underpinned with the right behaviours

OPPORTUNITY / PROBLEM STATEMENT

- Culture:** We have an environment with poor behaviours, including inappropriate banter or language, bullying, harassment and bias which undermines gender diversity, performance and safety.
- Recruitment:** The under-representation of women means Network Rail does not adequately reflect the communities it serves.
- Attraction:** The inability to attract a diverse range of candidates means that Network Rail is missing out on potential talent and the pool from which it is selecting is limited. For example, the number of women apprentices is very low in track-based, engineering apprentices.
- Facilities:** There are inadequate toilet facilities trackside and in some depots.
Retention: Women are more likely to leave Network Rail than men. There is also a poor take up of flexible working by both women and men in the Routes

PROPOSED ACTIONS

- Improve welfare facilities for our maintenance teams.
- Broaden / expand mental health & resilience programmes
- Roll out 'Take 5 to Care' Programme with the aim of creating a cultural shift to foster access, inclusion and respect for all.
- Everyone's E-Learning - ensure all future new starters complete this training.
- Embed a Domestic Abuse Policy: Create a zero tolerance approach to domestic abuse and provide appropriate support and guidance for victims as well as line managers.
- Introduce recruitment assessment methods and attraction campaigns to target a diverse audience.
- Review and promote flexible working requests
- Increase the representation and retention of BAME employees by leading BAME pilot and trial programmes.
- Ensure our leadership are D&I champions, promoting gender equality, being advocates of LGBTI and taking an inclusive approach to disability
- Implement career development sponsorship programme

ANALYSIS

Per the Diversity & Inclusion Reporting Dashboard dated 2nd February 2018 :-

We currently have, in LNW :-

- 10.18% of the total Workforce who are female
- 22.7% of New Starters who are female
- 12.65% of Leavers who are female
- 36.4% of Graduates who are female
- 10.1% of the total Workforce is BAME

(%ages of BAME/Asian Leavers, Starters & Promotions need to be checked)

IMPLEMENTATION PLAN

Initiative	2018				2019				2020			
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Take 5 to Care - Mental Health & Resilience												
Take 5 to Care - Domestic Abuse												
Take 5 to Care - Flexible Working												
Take 5 to Care - Career Development												
Take 5 to Care - Apprenticeships												
Take 5 to Care - Graduate Programme												
Take 5 to Care - Leadership Programme												
Take 5 to Care - Diversity & Inclusion												
Take 5 to Care - Safety												
Take 5 to Care - Wellbeing												
Take 5 to Care - Performance												
Take 5 to Care - Engagement												
Take 5 to Care - Retention												
Take 5 to Care - Absence												
Take 5 to Care - Turnover												
Take 5 to Care - Diversity & Inclusion												
Take 5 to Care - Safety												
Take 5 to Care - Wellbeing												
Take 5 to Care - Performance												
Take 5 to Care - Engagement												
Take 5 to Care - Retention												
Take 5 to Care - Absence												
Take 5 to Care - Turnover												

TARGET STATEMENT

Our strategy is to continuously improve business performance by promoting an inclusive and caring culture, whereby all employees feel safe, valued and able to be themselves at work. Establishing the right conditions for everyone to perform at their best is paramount to achieving our vision. This is why we encourage inclusive leadership behaviours, accountability, openness, transparency and fairness throughout our workforce.

In LNW, we aim to have :-

- 20% female workforce by the end of 2020
- 50% female ratio for all new recruits across all roles.
- 30% reduction in absence related to Mental ill-health
- 95% completion of "Take 5 to care" campaign (employees attended)
- Employee Engagement Index > 66%
- 250 Sponsees on talent grid or hired in

CHECK AND ACT (Verification & Follow-up)

- Delivery against a suite of targeted KPIs will be monitored on a periodic basis though CP6

DATE : 6th Nov 2018

REPORTING UNIT : HR – Tina Purkis

A3-T

PROPOSED TEAM CHARTER

THEME: Create an organisational capability and development programme

OPPORTUNITY / PROBLEM STATEMENT

- Recruitment & selection - reactive, slow and inefficient and does not attract sufficient diverse quality candidates
- Attraction & Early engagement - Lack of awareness of career opportunities and benefits of working at Network Rail externally. Poor quality of adverts, internally and externally. There is opportunity to improve LNW brand.
- Organisational change - Opportunity to improve long term strategic plan for the future of LNW
- Performance management - Poor adherence to process and lack of management skills
- Training & development - Lack of tools and management skills to develop a workforce fit for the future
- Talent & succession - Opportunity to extend current process and convert to an online tool
- Recognition - Opportunity to enhance current initiatives
- Leadership - Opportunity to develop capability framework
- Digital age - Lack of visibility of technological advancements and the impact on workforce planning
- Ageing workforce - Loss of critical skills and knowledge

PROPOSED ACTIONS

- Culture
 - Create a robust training plan to deliver increased performance & customer focus
 - Continue to collaborate across the matrix organisation
 - Develop and evaluate LNW induction process
- Organisational capability
 - Deliver targeted early engagement strategy
 - Expand LNW talent strategy to include retention of female employees
 - Support central activities in delivering Network Rail IR strategy
 - Proactive, inclusive, customer driven, and candidate focussed recruitment service
 - Review performance management system
 - Line manager upskilling to achieve adherence to people management processes and procedures
 - Augment succession plan for all key roles
- Organisational development
 - Develop LNW recognition strategy
 - Deliver organisational change programmes
 - Embed strategic workforce planning

ANALYSIS

- Resourcing time to hire - 57 days
- Vacancy gap - WD = 53%, Direct (Route) = 7.97%, Indirect = 10.69%, Signalling (Route) = 9.85%
- Organisational change programmes within headcount forecast - Variable
- Organisational change programmes tracked for ROI - Variable
- Performance management - 100% adherence achieved through heavy intervention
- PDP quality check - 20% per area
- Active STEM ambassadors - 75
- Employee engagement index (2017) - 56%
- Ready now successors for key roles - 90%

IMPLEMENTATION PLAN

Task Name	Duration	Start	Finish	R2	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2	R1
Create an organisational capability and development programme	1440 days	Mon 05/11/18	Fri 25/05/24																
Training	1440 days	Mon 05/11/18	Fri 25/05/24																
Deliver Every Day	1200 days	Mon 05/04/19	Fri 25/05/24																
Collaboration across a matrix organisation	1200 days	Fri 05/02/19	Fri 25/05/24																
Develop and evaluate LNW Induction process	1200 days	Mon 05/04/19	Fri 25/05/24																
Deliver targeted early engagement strategy	1200 days	Mon 05/04/19	Fri 25/05/24																
Expand LNW talent strategy	1200 days	Mon 05/04/19	Fri 25/05/24																
Delivery of IR strategy	784 days	Mon 05/04/19	Tue 31/05/22																
Proactive, inclusive, customer driven and candidate focussed recruitment service	1200 days	Mon 05/04/19	Fri 25/05/24																
Review of performance management system	280 days	Mon 05/04/19	Tue 21/05/23																
LNW succession planning	262 days	Mon 05/04/19	Tue 31/05/22																
Develop LNW recognition strategy	376 days	Mon 05/04/19	Mon 31/08/20																
Deliver organisational change programmes	436 days	Mon 05/04/19	Mon 20/08/20																
Embed strategic workforce planning	1200 days	Mon 05/04/19	Fri 25/05/24																
Leadership capability framework	784 days	Mon 05/04/19	Tue 21/05/23																

TARGET STATEMENT

Our strategy is to create an organisation that is capable of delivering the LNW vision and scorecard for CP6. We aim to attract the best talent and develop our people, so they reach their full potential. We aim to have an organisation that meets the needs of CP6 which is high performing and great performance is recognised.

Resourcing time to hire	75 days
Compliance to performance management rules and deadlines	100% completion
Apprenticeship Levy (Training & Sponsorship)	148 per annum
Efficiency / savings via org change	100 heads / equivalent savings
Employer of choice - external recognition	Top 50 employer in LNW regions.
Zero tolerance to poor behaviours, bullying and harassment.	50% reduction in B&H cases
Everyone in the organisation is operating at the right level.	Achievement of route scorecard
Succession - ready now successors for key roles	100%

CHECK AND ACT (Verification & Follow-up)

PBR
Level 3 plans

DATE: 9th Nov 2018

REPORTING UNIT: Tina Purkis - HR

A3-T

PROPOSED TEAM CHARTER

THEME : Develop the capacity and capability of Works Delivery to ensure delivery of the agreed CP6 capital programme

OPPORTUNITY / PROBLEM STATEMENT

- The financial settlement for the CP6 Strategic Plan is dependent on delivery of OPEX and CAPEX efficiencies
- There has been a shift in the asset management strategy away from total renewal to a more targeted strategy which increases the reliance on refurbishment, life extension and heavy maintenance interventions to maximise asset life for the lowest cost
- LNW Works Delivery employs directly a significant number of frontline staff who currently benefit from a national agreement, which has been extended several times, which guarantees no compulsory redundancy. Consequently it is a financial imperative that these staff are fully utilised and are not an OPEX burden
- Since separating from the maintenance organisation, Works Delivery have demonstrated the ability to deliver safe, cost effective and timely delivery activity
- The indicative volumes and values of renewals work allocated to Works Delivery in CP6 are a significant increase over those completed in CP5
- Works Delivery are responsible for structures examination, reactive and planned structures and earthworks activity, operational property inspection, reactive and planned buildings work and vegetation maintenance

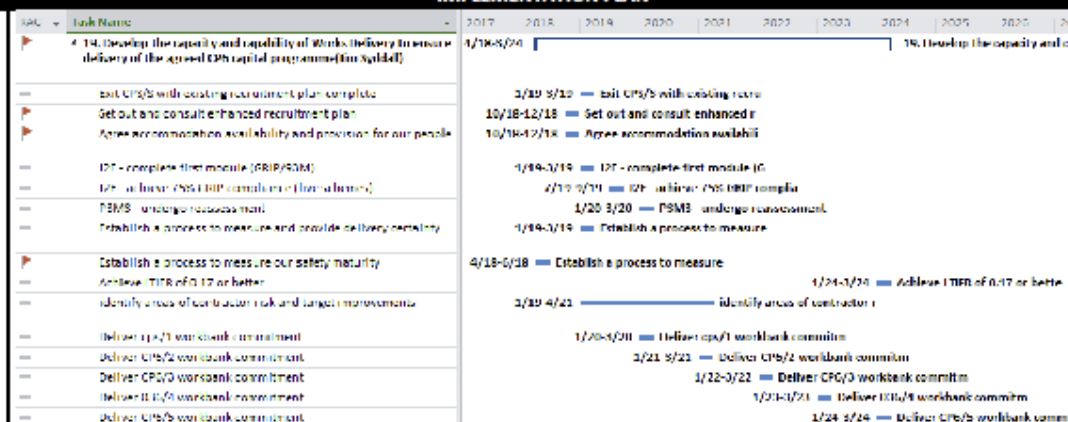
PROPOSED ACTIONS

- Complete the recruitment and appointment of staff to the current and agreed organisational template
- Agree, consult and populate the proposed organisation template in a phased manner to deliver the increasing workbank
- Improve the capability and capacity of our current and anticipated human resources by completing the improvement programme "Journey to Excellence"
- Increase and extend the support provided to Programme Manager teams by the Works Delivery support/assurance functions
- Engage with the route and HQ Contracts & Procurement to identify cost effective contracting solutions
- Engage with DRAM and sponsor teams with the intention of driving increased certainty of delivery outcomes
- Engage and set targets for those parts of the business responsible for supporting the recruitment programme
- Engage with DRAM and Finance teams in the production and delivery of an accommodation strategy

ANALYSIS

- The CP6 Business Plan includes £150m of OPEX efficiencies and £300m of renewals efficiencies
- An indicative value of £1.1bn for the WD CP6 workbank has been provided by the DRAM. This does not include the value of any work delivered by WD for IP, HS2, directly for the enhancements sponsor team etc.
- The value of the CAPEX efficiency delivered by WD activities must be more visible. Currently cost is compared against inaccurate budget figures and unit costs provided from elsewhere
- The impact of unforeseen and short notice changes, particularly additional requirements such as time bound SINs, needs to be considered
- The arrangements for WD providing an OPEX contribution should be reviewed and considered in the context of the extent of the CAPEX efficiencies

IMPLEMENTATION PLAN



TARGET STATEMENT

- Works Delivery will deliver the agreed renewals workbank over CP6
- Works delivery will be compliant with the timescales for structures examination and operational property inspections

CHECK AND ACT (Verification & Follow-up)

- Delivery will be reported on a periodic basis through CP6

DATE : 12th Nov 2018

REPORTING UNIT : Jim Syddall – Works Delivery

A3-T

PROPOSED TEAM CHARTER : LNW Route Stakeholder & Performance

THEME : Programme to Deliver Excellent Customer Service

OPPORTUNITY / PROBLEM STATEMENT

We are developing a Customer Charter and Stakeholder Engagement Strategy will implement these during CP6. Our Managed Stations are also developing strategies to improve the overall customer experience.

The above will be implemented across the entire Route to ensure that we have a structured and consistent approach to govern how we will interact and engage with our customers, whether they are internal or external.

Our main reasons for doing this are:

1. We want to have excellent relationships with all our customers and to work collaboratively wherever possible.
2. We want our passengers to have a world class experience when travelling through our stations
3. Our customers are all different; both in terms of how they are structured and what their business priorities and motivations are. This is not always understood across the Route and we can sometimes make incorrect assumptions about what we think our customers want or need.
4. There are many customer interactions and touch points within the Route. Our customers can receive inconsistent communications and levels of service.
5. We do not currently have an agreed Route Wide strategy that sets out how we will engage with our customers in CP6.

By doing this we hope to achieve our Vision of delivering excellent customer service across the whole of LNW in CP6.

PROPOSED ACTIONS

In order to deliver our Vision we will:

Define what "excellent customer service" means

Develop a Customer Charter to set out the behaviours we expect all LNW employees to display and the commitments we expect them to help deliver. Our Charter will include the strap line "Delivering Customer Excellence for LNW, Backbone of Britain."

Carry out an internal Stakeholder Mapping & Analysis exercise to identify specific requirements and involvement needed from other parts of the Route

Carry out an external Stakeholder Mapping & Analysis exercise to identify specific requirements and involvement needed for / from our customers

Develop and document a Stakeholder Engagement Strategy to set out how we will work collaboratively with our customers as well as how and when we will engage with them on key activities throughout the Control Period. This will include a review of all meetings that take place with external customers to ensure the right level of attendance is provided by the LNW Team.

Develop and implement a new bespoke Customer Service Training course and competency management framework for our Managed Stations staff, along with dedicated Customer Service Manager / Passenger Assist roles.

Implement a Plan, Do, Check, Act approach to customer excellence. Our Scorecards will form a key part of this and we will build on the approach adopted during 2018/19 to ensure that we have detailed action plans in place to deliver the agreed measures. We will also ensure that the LNW Exec team and Customer Exec teams are fully sighted on emerging trends and risks via discussion at the regular Directors Liaison / Alliance Board / Level One meetings.

Undertake regular reviews highlighting areas of concern, both internally and with our key customers. The Customer Account Teams will work with the relevant Route experts to tackle emerging areas of concern and ensure that relevant ownership is taken of issues and tracked through to resolution. We will update our Stakeholder Engagement Strategy as required.

ANALYSIS

		2018/19					2019/20					2020/21					2021/22					2022/23					2023/24					2024/25					2025/26					2026/27					2027/28					2028/29					2029/30					2030/31					2031/32					2032/33					2033/34					2034/35					2035/36					2036/37					2037/38					2038/39					2039/40					2040/41					2041/42					2042/43					2043/44					2044/45					2045/46					2046/47					2047/48					2048/49					2049/50					2050/51					2051/52					2052/53					2053/54					2054/55					2055/56					2056/57					2057/58					2058/59					2059/60					2060/61					2061/62					2062/63					2063/64					2064/65					2065/66					2066/67					2067/68					2068/69					2069/70					2070/71					2071/72					2072/73					2073/74					2074/75					2075/76					2076/77					2077/78					2078/79					2079/80					2080/81					2081/82					2082/83					2083/84					2084/85					2085/86					2086/87					2087/88					2088/89					2089/90					2090/91					2091/92					2092/93					2093/94					2094/95					2095/96					2096/97					2097/98					2098/99					2099/00					2100/01					2101/02					2102/03					2103/04					2104/05					2105/06					2106/07					2107/08					2108/09					2109/10					2110/11					2111/12					2112/13					2113/14					2114/15					2115/16					2116/17					2117/18					2118/19					2119/20					2120/21					2121/22					2122/23					2123/24					2124/25					2125/26					2126/27					2127/28					2128/29					2129/30					2130/31					2131/32					2132/33					2133/34					2134/35					2135/36					2136/37					2137/38					2138/39					2139/40					2140/41					2141/42					2142/43					2143/44					2144/45					2145/46					2146/47					2147/48					2148/49					2149/50					2150/51					2151/52					2152/53					2153/54					2154/55					2155/56					2156/57					2157/58					2158/59					2159/60					2160/61					2161/62					2162/63					2163/64					2164/65					2165/66					2166/67					2167/68					2168/69					2169/70					2170/71					2171/72					2172/73					2173/74					2174/75					2175/76					2176/77					2177/78					2178/79					2179/80					2180/81					2181/82					2182/83					2183/84					2184/85					2185/86					2186/87					2187/88					2188/89					2189/90					2190/91					2191/92					2192/93					2193/94					2194/95					2195/96					2196/97					2197/98					2198/99					2199/00					2200/01					2201/02					2202/03					2203/04					2204/05					2205/06					2206/07					2207/08					2208/09					2209/10					2210/11					2211/12					2212/13					2213/14					2214/15					2215/16					2216/17					2217/18					2218/19					2219/20					2220/21					2221/22					2222/23					2223/24					2224/25					2225/26					2226/27					2227/28					2228/29					2229/30					2230/31					2231/32					2232/33					2233/34					2234/35					2235/36					2236/37					2237/38					2238/39					2239/40					2240/41					2241/42					2242/43					2243/44					2244/45					2245/46					2246/47					2247/48					2248/49					2249/50					2250/51					2251/52					2252/53					2253/54					2254/55					2255/56					2256/57					2257/58					2258/59					2259/60					2260/61					2261/62					2262/63					2263/64					2264/65					2265/66					2266/67					2267/68					2268/69					2269/70					2270/71					2271/72					2272/73					2273/74					2274/75					2275/76					2276/77					2277/78					2278/79					2279/80					2280/81					2281/82					2282/83					2283/84					2284/85					2285/86					2286/87					2287/88					2288/89					2289/90					2290/91					2291/92					2292/93					2293/94					2294/95					2295/96					2296/97					2297/98					2298/99					2299/00					2300/01					2301/02					2302/03					2303/04					2304/05					2305/06					2306/07					2307/08					2308/09					2309/10					2310/11					2311/12					2312/13					2313/14					2314/15					2315/16					2316/17					2317/18					2318/19					2319/20					2320/21					2321/22					2322/23					2323/24					2324/25					2325/26					2326/27					2327/28					2328/29					2329/30					2330/31					2331/32					2332/33					2333/34					2334/35					2335/36					2336/37					2337/38					2338/39					2339/40					2340/41					2341/42					2342/43					2343/44					2344/45					2345/46					2346/47					2347/48					2348/49					2349/50					2350/51					2351/52					2352/53					2353/54					2354/55					2355/56					2356/57					2357/58					2358/59					2359/60					2360/61					2361/62					2362/63					2363/64					2364/65					2365/66					2366/67					2367/68					2368/69					2369/70					2370/71					2371/72					2372/73					2373/74					2374/75					2375/76					2376/77					2377/78					2378/79					2379/80					2380/81					2381/82					2382/83					2383/84					2384/85					2385/86					2386/87					2387/88					2388/89					2389/90					2390/91					2391/92					2392/93					2393/94					2394/95					2395/96					2396/97					2397/98					2398/99					2399/00					2400/01					2401/02					2402/03					2403/04					2404/05					2405/06					2406/07					2407/08					2408/09					2409/10					2410/11					2411/12					2412/13					2413/14					2414/15					2415/16					2416/17					2417/18					2418/19					2419/20					2420/21					2421/22					2422/23					2423/24					2424/25					2425/26					2426/27					2427/28					2428/29					2429/30					2430/31					2431/32					2432/33					2433/34					2434/3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A3-T

PROPOSED TEAM CHARTER: LNW Route Stakeholder & Performance

THEME: Work within ISO44001 (Collaborative Working) Framework on LNW Route

OPPORTUNITY / PROBLEM STATEMENT

Team LNW has an aspiration to work within the ISO44001 (Collaborative Working) framework during CP6. An opportunity has arisen whereby two of our lead Train Operator Customers have Franchise Commitments to themselves achieve this accreditation. This presents an opportunity for LNW Route to support both customers in achieving this through the Alliance relationships.

Team LNW will benefit as follows:

- Working together in this way will strengthen the Alliance relationships through a structured framework
- We will be supporting two of our lead customers in achieving one of their committed Franchise Obligations
- We will acquire first-hand experience of the accreditation process; gaining invaluable knowledge.

West Midlands Trains have a franchise commitment to gain ISO44001 accreditation by 1st February 2019 and Transpennine Express has a franchise commitment to gain ISO44001 accreditation by 31st March 2019.

PROPOSED ACTIONS

In order to work towards align LNW's way of working with the ISO44001 framework, and to support our customers in their process to gain ISO44001 accreditation by the committed deadlines, we will:

- Identify who within Network Rail already holds this accreditation and arrange meetings to discuss best practise and lessons learnt. The Customer Account Managers for WMT and TPE will lead for NR on supporting both customers with their applications.
- Undertake a desktop exercise with WMT and TPE to ascertain the current level of attainment
- Document the relationship with both customers using the framework agreement 'tick list'
- Gain leadership commitment to this culture change
- Develop and document a strategy to deploy ISO44001 and achieve its benefits for Team LNW, based on our partnership working with WMT and TPE and the learning gained from supporting their applications
- Identify / appoint a Route lead to manage the process for gaining potential accreditation for within Team LNW
- Implement a Plan, Do, Check, Act approach to aligning working practices. This will include undertaking regular reviews to highlight areas of concern
- Work with appropriate Route experts to tackle emerging areas of concern and ensure that suitable ownership is taken of issues and that these are tracked through to resolution.

ANALYSIS

NR Resource requirements:

Stakeholder Team – 'front door' for TOC requirements for evidence and documentation, and to lead NR Exec on culture change within the Route.

Alliance Board Members – required drive collaborative behaviours and culture change within their teams.

Evidence for the ISO44001 accreditation will be based on the relationship between WMT and NR Property Teams.

Comms Manager – succinct communications both internally and externally (jointly with TOC Comms Team)

Route Lead – will be required should LNW want to develop its own project to contribute further to Network Rail's existing ISO44001 accreditation. The timescales for this would depend on the scope and size of the project/relationship selected.

IMPLEMENTATION PLAN – Next Key Milestones



TARGET STATEMENT

- West Midlands Trains achieve their accreditation by 1st February 2019
- Transpennine Express achieve their accreditation by 31st March 2019
- We have an agreed strategy to work within ISO44001 framework for Team LNW
- We have stronger Alliance relationships with West Midlands Trains and Transpennine Express, evidenced by feedback and advocacy.

CHECK AND ACT (Verification & Follow-up)

The timescales are tight for both Train Operators; both West Midlands Trains and Transpennine Express are liaising closely with LNW Customer Account Teams and have completed an analysis of requirements to achieve accreditation and are currently compiling relevant evidence.

WMT have passed the Stage One assessment for ISO44001 and have a recommendation from BSI for the Stage Two assessment. This has been scheduled for 22nd and 23rd January. The stakeholder team continue to work closely with WMT to ensure the required evidence is in place to achieve accreditation by the committed obligation deadline of 1st February 2019. This will drive the activities on the implementation plan going forward.

DATE : November 2018

REPORTING UNIT :

A3-T

PROPOSED TEAM CHARTER

THEME: Develop an Integrated Transport Planning Approach

OPPORTUNITY / PROBLEM STATEMENT

We are creating one all-encompassing team which works collaboratively across all parts of the regional transport industry. We will work closely with the newly elected city Mayors and their teams to provide a seamless service for customers across all modes of transport.

This integrated transport approach will include planning rail work whilst also considering work planned by Highways England and major public events. We will work closely with Transport for the West Midlands and Midlands Connect to enhance the rail commuting options into the City of Birmingham in order to ease the impact of HS2 construction on the road network.

PROPOSED ACTIONS

1. **Integrated Programme:** Prepare an integrated portfolio of capital programmes for CP6 (DfT Capacity Enhancements / Renewals / Third Party funded projects).
2. **PMO:** in line with principles agreed by NR Board in the Capital Delivery Model Implementation Plan establish PMO within Director Sponsorship Organisation to manage capital programmes portfolio. (EE/HB)
3. **New Franchises:** Dial in new franchise commitments to integrated plan.
4. **External Funding:** Ensure new external funding opportunities are reflected in the integrated plan
5. **External Transport Bodies:** Develop relationship with LTA and exchange planning information

ANALYSIS

Currently on LNW Route:

- Integrated planning opportunities across the capital portfolio are limited and dependencies are constrained.
- Opportunity to partner the following external transport bodies to develop a cohesive integrated transport plan (not limited to; TfWM, HS2, TfGM, Merseytravel, TfL, Highways Agency).
- Opportunity to prepare cross industry plan to support major events including the Commonwealth Games, Coventry European City of Culture, European Cup play-offs.

IMPLEMENTATION PLAN



TARGET STATEMENT

In CP6 the Director Route Sponsorship Organisation will:

- Collaborate closely with system operator and route planning teams to strengthen LNW's integrated business planning process.
- Collaborate closely with local transport authorities and organisations to share planned works information to minimise disruption to customers.

CHECK AND ACT (Verification & Follow-up)

- Director Route Sponsorship A3-T Team Charter – for review and sign-off
- Level 2 A3-X matrix (day 2) undertaken in the period – Outputs pending – for review at PBR
- Implementation plan prepared and milestones proposed for periodic reporting and review at PBR

DATE: 12th Nov 2018

REPORTING UNIT: Pat Cawley Director Route Sponsorship LNW

A3-T

LNW COMMUNICATIONS

'Customers first' communications campaign - internal, stakeholders, industry, line-side neighbours, public

OPPORTUNITY / PROBLEM STATEMENT

- Our key reputational challenges are: poor train punctuality, a seemingly opaque, unaccountable and overly complex industry and a public which does not fully understand what Network Rail does.
- LNW's CP6 communications strategy seeks to help improve performance and, in turn, build customer satisfaction and public trust. This can be summed up by 'customers first' or 'passengers first.'
- Several industry reviews are taking place. We will reflect these in our communications strategy.
- A key external tactic is proactively, repetitively, collaboratively and transparently telling the story of what we do / the challenges we and our industry partner face to better serve customers.
- NR's public reputation, and by extension LNW's, is below several other comparably large brands.
- By delivering targeted communications support for LNW's CP6 strategic initiatives (see implementation plan) we will help boost performance, public understanding and public trust in the railway.

PROPOSED ACTIONS

- Ongoing internal campaign emphasising 'golden thread' linking everyone's personal objectives to LNW's A3X delivery.
- Continuing to embed Backbone of Britain internal brand: personalised wall art at depots and offices.
- Grow LNW Yammer group membership to 85% of LNW population by 2024, driving engagement in CP6 delivery plan.
- Ensure all LNW comms team members use our LEAN methodology on all proactive comms activities.
- Develop a long-term comms strategy, agreed with HS2 and DfT, with sustainable key-messaging for HS2 ONW.
- C&C: plan to reduce the average age of customer cases to 25 days before the end of CP5.
- Systematic repetition in all external communications of our tracked phrases - as measured by NR public research.
- Improve on "Railway Upgrade Plan" and "clear and open" comms metrics - as measured by NR public research.
- Devise and deliver an LNW stakeholder comms strategy for CP6 that puts the needs of passengers and lineside neighbours first; and deepens collaborative working with all industry partners including TOCs, mayors, SNTBs.

ANALYSIS / Level 2 METRICS

Metrics

- C&C - average case age to 29 days; annual railway complaints; drive advance-notice process.
- NR public research - "Railway Upgrade Plan" awareness among general population. Target 30% March 2019 - up from 29% 17/18. To 40% by 2024. (YTD in 2018: July 30%; Aug 30%; Sept 31%)
- NR public research - Net increase in agreement among public that LNW "produces clear and open comms." Target 17% in 18/19 (15% in 17/18). Target 25% by 2024.
- Internal - Grow active LNW Yammer group members to 85% of route population.

Analysis

- Our average case age is unacceptably high. We plan to reduce it. This is a better measure of customer satisfaction than total railway work complaints. We plan to prioritise this in CP6.
- Railway Upgrade Plan: the more people know of our plan the more favourable their view of us.
- Growing the active users on LNW's Yammer group will driver employee engagement.
- Headwinds include rising consumer expectation and HS2 and East West Rail construction.
- Various railway reviews and current train performance point to an industry that can improve service, and understanding of what it does and how, for fare-paying customers.
- Achieving the metrics outlined will improve business performance and our position on the graph below.



IMPLEMENTATION PLAN

Activity	Start	End	Owner	Priority	Status	Notes
Develop and deliver an LNW stakeholder comms strategy for CP6 that puts the needs of passengers and lineside neighbours first; and deepens collaborative working with all industry partners including TOCs, mayors, SNTBs.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
Ensure all LNW comms team members use our LEAN methodology on all proactive comms activities.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
Develop a long-term comms strategy, agreed with HS2 and DfT, with sustainable key-messaging for HS2 ONW.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
C&C: plan to reduce the average age of customer cases to 25 days before the end of CP5.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
Systematic repetition in all external communications of our tracked phrases - as measured by NR public research.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
Improve on "Railway Upgrade Plan" and "clear and open" comms metrics - as measured by NR public research.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
Devise and deliver an LNW stakeholder comms strategy for CP6 that puts the needs of passengers and lineside neighbours first; and deepens collaborative working with all industry partners including TOCs, mayors, SNTBs.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
Grow LNW Yammer group membership to 85% of LNW population by 2024, driving engagement in CP6 delivery plan.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
Continuing to embed Backbone of Britain internal brand: personalised wall art at depots and offices.	2019-01-01	2024-12-31	LNW Communications	High	On Track	
Ongoing internal campaign emphasising 'golden thread' linking everyone's personal objectives to LNW's A3X delivery.	2019-01-01	2024-12-31	LNW Communications	High	On Track	

TARGET STATEMENT

- The LNW Communications team strategic intent is 'growing our capabilities to deliver a measurably improving communications service supporting the LNW business plan.'
- This supports the LNW vision: 'One team delivering brilliant services for customers and taxpayers.'
- 'Building public confidence in the railway' and 'passenger first' are NR's corporate aims. By delivering on our strategic intent and route vision, we will improve performance and achieve these corporate aims.

CHECK AND ACT (Verification & Follow-up)

- Delivery will be tracked and reported on the periodic basis through CP6.

A3-T

PROPOSED TEAM CHARTER

THEME : Seek ISO55001 (Asset Management Standard) Certification

OPPORTUNITY / PROBLEM STATEMENT

The adoption of the ISO 55001 International Standard will enable LNW Route to optimise performance from our assets in the achievement of our organisational objectives while balancing financial, environmental, risk and sustainability factors. The application of an asset management system provides assurance that those objectives can be achieved consistently and sustainably over time.

The benefits of good asset management include: improved safety, improved financial performance, informed asset investment decisions, managed risk, improved performance, enhanced reputation, improved efficiency and organisation sustainability.

PROPOSED ACTIONS

- Create T post for ISO 55001 Project Manager
- Define the LNW Route Asset Management Objectives and scope of the Asset Management System
- Document the LNW Asset Management System with accountability and responsibility clearly assigned
- Perform a gap analysis on the NR Asset Management Policy & Strategy with LNW route RSP
- LNW Exec approval of plan and buy in
- Create a plan to deliver ISO 55001 awareness to gain buy in from all stakeholders
- Route reorganisation conforms to ISO 55001 requirements and validated through LNW Systems Review Panel
- Build an internal route assurance plan that assesses compliance to ISO 55001
- Review business plan against policy and strategy requirements (pre & post efficient)
- Identify all the inputs & outputs required to facilitate the management review of the Asset Management System

ANALYSIS

LNW Route's baseline ISO 55001 assessment (AMCL – April 2017) indicated that we were 87% non-compliant or at risk against the 24 clause requirements which were assessed.

The key areas of non-compliance being

- Determining the scope of the asset management system
- Leadership and review of the asset management system

This has led to misunderstanding of roles and responsibilities, adverse impact on FPM, lack of volume delivery and a decline in performance.

IMPLEMENTATION PLAN

Action	CP6 - Yr1				CP6 - Yr2				CP6 - Yr3				CP6 - Yr4				CP6 - Yr5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Produce LNW Route IMS which documents and clarifies Exec accountability																				
LNW Exec awareness / cascade																				
Route Asset Management System endorsement from Route Systems Review																				
Implement Route Asset Management System																				
Identify the review process for Route Asset Management System																				
Annual review & improvement of Route Asset Management System																				

TARGET STATEMENT

LNW Route achieves ISO 55001 compliance by the end of CP6 with demonstrable benefits in our CP7 Strategic Business Plan submission.
All objectives are achieved with stakeholder confidence that LNW route delivers commitments safely, on time, to budget and delivering the anticipated benefits.

CHECK AND ACT (Verification & Follow-up)

Conformance status for LNW route against the 24 clauses of ISO 55001.

Continual self-assessment with structured continuous improvement culture embedded throughout the LNW Asset Management System elements and processes.

DATE : 28 Jan 2019

REPORTING UNIT : Carole Bayliss - Route Asset Management

A3-T

PROPOSED TEAM CHARTER

THEME : Develop & Implement Supply Chain Improvement Programme

OPPORTUNITY / PROBLEM STATEMENT

- The ability of LNW to continue to deliver successfully during CP6 is reliant upon stability of our programme. We have shown great attention to detail preparing the CP6 workbook. The programme has been meticulously prioritised and is detailed in the Route Strategic Plan.
- A strong plan enables us to offer certainty to our supply chain. In return they will enable us to hit our milestones and achieve substantial gains in efficiency.
- We will continue to deliver improvements in value for money through structured continuous improvement.

PROPOSED ACTIONS

- Create a single integrated asset renewals workbook that facilitates rich reporting and oversight for all stakeholders, deliverers and management.
- Transfer all asset legacy workbooks (Excel) into new renewals workbook solution
- Apply a governed change control system to the unified workbook so that all changes are visible and approved by RAM, Deliverer, Finance and if required DRAM / CCP
- Build tools that allows client and deliverer to look for efficiency opportunities in our workbooks through visualisation of the detail
- Create and embed a process to use new PowerBI tools to look for delivery efficiencies
- Utilise new analysis tools to smooth the workbook across delivery years to avoid peaks and troughs

ANALYSIS

- LNW renewals workbooks have historically been managed through individual Excel files held in a SharePoint folder and the change control applied to these was not sufficiently robust
- Inconsistent requirements remitted to supply chain
- RAM led Scope creep leading to poor option selection, cost and program escalation
- Misalignment of Route business plan and original estimates leading to poor forecasting
- Poor level of control on existing renewals workbooks with changes made that are not transparent
- In efficient workbook file which rarely aligns with Oracle Projects
- Deliverers and RAM teams have not had clear visibility of future years work beyond projects set up in OP leading to lack of integration

IMPLEMENTATION PLAN

RAG	Task Name	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	✓ Develop and implement Renewals Delivery Improvement Plan (Guide B)			4/18 3/24									
	Develop and build the integrated renewals workbook			4/18 3/24									
	Build the change control system to manage the renewals workbook			7/18 5/18									
	Govern periodic change control to renewals workbook			10/18 1/18									
	Develop and design automatic remit generation process			1/17 3/17									
	Roll out remit governance process			4/16 5/16									
	Roll out Deferred Renewals governance system			1/19 1/19									
	Confirm and lock down CP6 baseline plan (RF11)			1/19 3/24									
	Confirm baseline Budget for annual renewals plans			1/17 3/24									
	Identify contingent renewals for CP6 by asset			1/17 3/24									
	Share the annual workbooks with delivery teams and supply chain			1/19 3/21									

TARGET STATEMENT

- Embed a single unified workbook with governed change control for start of CP6
- Continually develop tools to identify efficiency opportunities in the renewals workbooks
- Robust governance of baseline and contingent workbook planning process

CHECK AND ACT (Verification & Follow-up)

- Undertake post implementation reviews with each asset
- Embed use of the analysis tools in periodic reviews to monitor alignment between budget, workbooks and OP

DATE : 9th Nov 2018

REPORTING UNIT : Carole Bayliss - Route Asset Management

A3-T

PROPOSED TEAM CHARTER

THEME : Adopt & Extend SCI – Better Every Day

OPPORTUNITY / PROBLEM STATEMENT

The financial settlement for the CP6 Strategic Plan is dependent on delivery of opex and capex efficiencies.

In addition to identified initiatives delivering efficiencies within the route there is a further £13m in efficiencies required with no identified means of achieving this. To deliver these we will have to build on the culture change programme Better Everyday and continue to develop the mindset that business improvement is part of the day job and not additional for everyone.

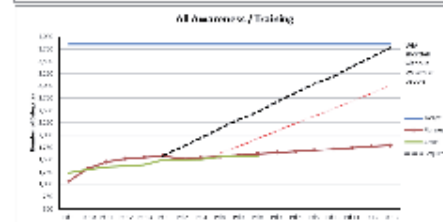
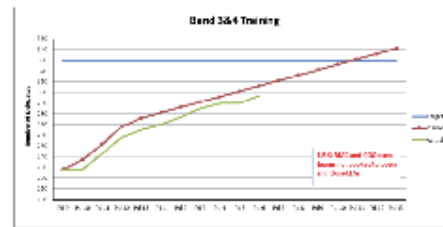
In order to generate this mindset change we will have to continue and extend the current deployment of training and mentored application of learning with a greater focus on SCI project delivery working closely with all areas of the business, particularly Finance to evidence these efficiencies. In addition we will develop communication and engagement strategies, develop and drive a robust knowledge share mechanism maximising initiative benefits across the route and supporting performance improvements from other areas such as performance boards etc.

PROPOSED ACTIONS

1. Appoint the right level of trained and competent resources in the SCI Team to meet expectations.
2. Increase SCI capabilities across all of the LNW organisation (circa 7000).
3. Support identification and delivery of a hopper of improvement initiatives enabling business units to deliver the £13m efficiencies attributed to Lean.
4. Lead and deliver on a 'land and expand' programme that communicates successful initiatives throughout the route further enabling business units to deliver the £13m efficiencies attributed to Lean.
5. Build on the culture change programme of 'Better Everyday'.
6. Support the creation and delivery of an effective Route Governance Operating System to effectively drive performance across the Scorecard.

ANALYSIS

	Current	Target
Head Count	6	10
SCI Required to Operate Competency (RTO)	88	177
LNW Bands 1 - 4 SCI Trained	90%	100%
LNW Staff Awareness Trained	41%	100%



IMPLEMENTATION PLAN



TARGET STATEMENT

	Current	Target
Head Count	6	10
SCI Required to Operate Competency (RTO)	88	177
LNW Bands 1 - 4 SCI Trained	90%	100%
LNW Staff Awareness Trained	41%	100%

CHECK AND ACT (Verification & Follow-up)

- Glide paths will be used to monitor high level metrics periodically throughout CP6
- Work closely with other functions finance, CMO etc. to align and synchronise activities.

PROPOSED TEAM CHARTER

THEME : Deliver and Track CP6 Efficiency Programme

OPPORTUNITY / PROBLEM STATEMENT

The regulator will expect delivery of these efficiencies and there is an expectation that under devolved route regulation, we will be required to report on our progress when we attend regulatory review meetings.

If efficiencies are delivered in excess of the target, we will have more money to invest in our business.

Delivery of the efficiencies depends on coordinated action with IP and Route Services.

PROPOSED ACTIONS

- Appoint the right level of resources in the Finance Team to measure and monitor delivery of efficiencies
- Ensure that we have committed and engaged business partners to deliver the efficiencies proposed
- Identify Exec Sponsors, Sponsors Agents, Project Leads and Finance Leads to each Efficiency Initiative
- Generate 1 page summaries for each initiative which details the expected realisation plan and required business change
- Identify initiatives that would benefit from a more formal project management approach (MSP4LNW)
- Agree efficiency methodology and financial estimates with Budget Holders (OPEX) and Deliverers (CAPEX)
- Develop process to manage, monitor and report efficiency delivery progress.
- Establish a process for identifying new efficiency opportunities and headwinds
- Establish a process for intervening and taking corrective action if the efficiency targets are not being met
- Establish a reporting and communication plan so that the whole business is on board and committed to driving efficiency

ANALYSIS

- The CP6 Business Plan includes £150m of opex efficiencies and £384m of renewals efficiencies.
- The high level breakdown of these values is included on the following pages. Behind this there are further spreadsheets that show the efficiency plans at a granular level.
- Based on experience, there inevitably will be some additional headwinds that will require additional efficiency schemes to offset the cost.
- In CP5 the route failed to agree sufficient efficiency sponsorship/ownership at budget holder/deliverer level resulting in high levels of overlay and risk being held centrally each year.
- In CP5 the route failed to adequately capture the headwinds entering our cost base each year, which led to unexpected overspends against budget.

IMPLEMENTATION PLAN

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015	3016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[illegible]

- The Route will deliver in excess of £534m efficiencies over CP6.
- Delivery will be in accordance with the phasing committed in the 5 year business plan.
- The implementation of a robust process to monitor and measure OPEX and CAPEX efficiencies and headwinds throughout the control period
- The implementation of a process to identify and validate new headwinds and efficiencies throughout the control period.

CHECK AND ACT (Verification & Follow-up)

Delivery will be reported on a periodic basis through CP6.

DATE : 9 th Nov 2018

REPORTING UNIT : Nicola Dean – Finance
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A3-T

PROPOSED TEAM CHARTER

THEME : CP6 Business Planning Improvement Programme

OPPORTUNITY / PROBLEM STATEMENT

A fully coordinated multi-functional business planning exercise is completed once every 5 years in order to comply with the corporate strategic planning requirements and secure funding for the next control period. Annual budgeting exercises and quarterly reforecasting exercises take place, but these are financial exercises and take place independently from all of the objectives that were committed to in the strategic business plan. In CP6 there is an expectation that the financial freedoms enjoyed in CP5 may be withdrawn and we may lose flexibility to move funding between opex and capex and we are unlikely to carry funding over from one financial year to the next. As a business, we need to ensure we have improved planning and control processes in place to make sure that we extract the best possible value from our funding each and every year and continue to deliver the commitments made in the strategic business plan. More comprehensive annual business planning would enable us to deliver this objective.

PROPOSED ACTIONS

- Use the learning from the CP6 business plan to determine key activities in an annual business plan
- Propose a straw man
- Communicate to the business and seek feedback
- Document the new process
- Complete the exercise in Year 1
- Review lessons learned to inform an improved process document
- Repeat annually

ANALYSIS

The route does not have an annual business planning process that then informs the budget and sets goals for the year ahead – both financial and non-financial

The route relies heavily on moving funding from opex to capex in order to manage cash compliance e.g. £8.6m in Y4 of CP5.

The Route Exec have lost sight of all of the commitments made in the CP5 plan and do not therefore measure and monitor delivery of financial and non-financial measures over CP5.

Budgeting is done in SILOs from a bottom up perspective and then added up to determine funding requirements, rather than a top down exercise that sets the goals and objectives to drive departmental plans and associated funding requirements.

IMPLEMENTATION PLAN

Implementation Plan - Business Planning Improvement Plan

	2018/19				2019/20				2020/21				2021/22				2022/23				2023/24			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Use learning from the CP6 plan to determine key activities in an annual business plan	X																							
Propose a straw man		X																						
Communicate to the business and seek feedback			X																					
Incorporate feedback into a documented process				X																				
Complete the exercise in Year 1					X	X																		
Review lessons learned to inform an improved process document						X							X											
Repeat annually							X	X					X	X							X	X		

TARGET STATEMENT

The Route has an annual business planning exercise that is aligned to the commitments made in the CP6 strategic plan.

The annual business plan is used to inform goals and objectives, thereby informing the annual budgeting process.

By the end of CP6 the route has delivered all commitments made in the CP6 strategic plan and has remained cash compliant.

CHECK AND ACT (Verification & Follow-up)

Annual business plan process is applied.

After completion, the process is reviewed and amended to reflect best practise.

The scorecard is used to measure successful delivery of goals on a periodic basis.

DATE : April 2018

REPORTING UNIT : Finance

A3-T

PROPOSED TEAM CHARTER

THEME : Create a Risk Management Improvement Programme

OPPORTUNITY / PROBLEM STATEMENT

The success / failure of the Route is very much dependant on its ability to understand, control and mitigate risk. Thus far the Route has been recognised as having strong level 1&2 risk management through the ERR and BAC processes. However of late with the transition period from Roisin Nelson and the interim 9 month period to Simon Hall as the newly appointed Integrated Risk Manager the Route has not maintained its high standard in this area. The Route also needs to understand the risks managed at Level 3 - 5 and how they could potentially impact the Level 2 status.

If Risks are managed within tolerance then the Route will be able to deliver against its CP6 strategic plan

If risks are understood and managed at a lower level and in the functional areas then risks and controls will be identified earlier.

Delivery of the efficiencies depends on the Exec really supporting the Integrated Risk Manager to implement a sustainable and repeatable process that is owned in their business areas.

PROPOSED ACTIONS

- Appoint the integrated Risk Manager.
- Baseline the current Level 2 ERR's.
- Identify initiatives to improve the Level 2 process.
- Agree priorities for Level 2 gap closure.
- Identify themes and initiatives to close the gaps on prioritised list from above.
- Establish and implement a process for identifying level 3 - 5 risks including ownership within functional areas.
- Establish a process for intervening and taking corrective action when the level 3 process is not working in a particular area.
- Establish a reporting and communication plan to ensure that stakeholders are identified and communicated with effectively.
- Identify and incorporate a structured and consistent assurance process for all L1 - L5 risks across the route.

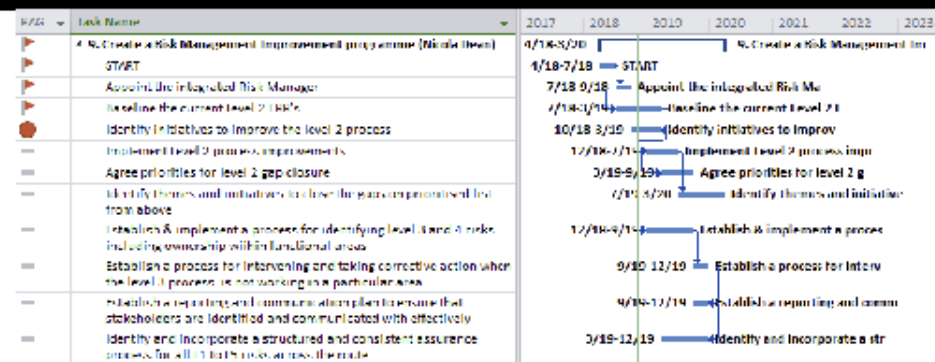
ANALYSIS

Level 1&2 ERR's currently exist for 16 key risk areas and they are owned by members of the Executive team.

The Level 2 ERR's are reviewed quarterly by risk owners / managers and this culminates in a Route Quarterly BAC (Business Assurance Committee).

Level 3 - 5 risks are not currently managed in a consistent way.

IMPLEMENTATION PLAN



TARGET STATEMENT

The Route now effectively manages its level 2 risks consistently and with key actions to bring each one back to target level of risk.

The Route now has a Level 3 - 5 risk process which is owned and driven by the functional areas and co-ordinated by the Integrated Risk Manager.

CHECK AND ACT (Verification & Follow-up)

Periodic reviews will take place to assess and control emerging risks through PBR and Functional risk reviews.
Delivery will be reported on a quarterly basis through BAC.

DATE : 9th Nov 2018

REPORTING UNIT : Nicola Dean - Finance

A3-T

PROPOSED TEAM CHARTER

THEME: Support & deliver the Enhancements needed to accommodate passenger and freight growth

OPPORTUNITY / PROBLEM STATEMENT

Network Rail is currently the UK largest infrastructure client, spending c£1.0bn per annum in LNW Route alone. At the beginning of CP5 there were difficulties with the capital delivery of both enhancement programmes and renewals with unforeseen cost increases and schedule delays leading to the Bowe and Hendy (Affordability) Reviews.

Over the course of CP5 there has been a substantial improvement in the development of capital investment decision making and delivery. Network Rail (including LNW Route) have responded well to past reviews and made changes which have helped improve performance, for example the Enhancements MoU and Open for Business programme.

To prepare for CP6 two reviews have been completed (EY and KPMG), these have helped to shape a programme of work aimed at making further improvements in capital delivery and whole system decision making and reporting.

LNW Route is ready to prepare a plan to support the mobilisation of further plans to improve capital delivery to include the management of the Route's complete capital delivery plan (ex Hs2 ONW):

- **Sponsorship Capability:** building an 'intelligent client' capability in LNW Route as part of an augmented Route sponsorship capability.
- **Sponsorship Allocation:** consider which parts of the LNW Route CP6 Renewals Plan require 'complete programme sponsorship' and establish a resource-based plan to sponsor these outputs and integrated with key network enhancements and third-party programmes.

PROPOSED ACTIONS

1. **Capital Delivery Distribution (Works Allocation):** accountability for decision will sit with triumvirate of DRAM / Director Sponsorship & Route Capital Delivery Director (as agreed by NR Board). Define governance for LNW Route contestability of Development and Delivery Agents.
2. **Capabilities:** identify capability gaps and establish and deliver programme to develop additional competencies.
3. **Renewals Sponsorship:** prepare a plan to provide sponsorship resource for the CP6 Renewals plan and management of the Route capital works portfolio.
4. **Renewals Governance:** Establish governance that ensures effective working between Sponsors, RAM's and Business Development team.
5. **Customer Relationship Management process:** Work with Business Development Director / System Operator to create an 'end to end' customer relationship management process.
6. **New Franchises:** provide a lead sponsor for each refranchising exercise. Obtain and assess impact of franchisee proposal on capital works programme.
7. **External Funding:** support Business Development Director in developing a priority list of enhancements for which external funding will be pursued.

IMPLEMENTATION PLAN

Presently in LNW Route:

- There have been only limited opportunities to make the capital portfolio contestable
- Only limited renewals volumes benefit from professional sponsorship
- There is no 'intelligent client' to make capital delivery allocation decisions
- Integrated planning opportunities across the capital portfolio are limited and dependencies are constrained.

RAG	Task Name	2017	2018	2019	2020	2021	2022
●	# 20. Support & deliver the Enhancements needed to accommodate passenger and freight growth (Pat Cawley)	9/18	3/19				
●	↳ Capital Delivery Distribution (Works Allocation)	9/18-10/18					
●	↳ Capabilities	10/18-11/18					
●	↳ Renewals Sponsorship	11/18-12/18					
—	↳ Customer Relationship Management process	12/18-3/19					
—	↳ New Franchises	1/19	2/19				
—	↳ External Funding	2/19-3/19					

TARGET STATEMENT

In CP6 the Director Route Sponsorship Organisation will:

- Collaborate with the Capital Delivery Director and DRAM to determine what capital works is done, by when and by whom.
- Strengthen its Intelligent Client Capability to hold delivery organisation(s) to account, challenge and support funding partners
- Encourage and facilitate greater contestability of our capital programmes
- Improve the safety performance of capital projects and capability by P3M3

CHECK AND ACT (Verification & Follow-up)

- An action plan is being prepared for review at Director Route Sponsorship PBR
- Level 1,2 and 3 X Matrix will be reviewed periodically and reported at PBR / QBR

DATE: 12th Nov 2018

REPORTING UNIT: Pat Cawley - Director Route Sponsorship LNW

A3-T

PROPOSED TEAM CHARTER

THEME : Grow External investment in LNW including Open for Business

OPPORTUNITY / PROBLEM STATEMENT

- Purpose: To enhance the operational performance, functionality and customer experience of rail customers through third party investment
- Procedure: To ensure that all third party funding opportunities are captured and prioritised in a timely, co-ordinated and professional manner
- Priority: That all those opportunities that are considered priorities are given on going significance within the Business Development process
- Funding: This is secured then for the priority projects in accordance with the "Open for Business Principles"

PROPOSED ACTIONS

- Create and implement Business Development governance mechanisms and comms / engagement plan; implement Customer Relationship Management process as developed by Open for Business Programme.
- Recruit full team for CP6; Create an effective induction and personalised development plan for all new starters; ensure 2 of the Business Development team attend LEAN training
- Explain to potential funders the range of funding, financing and delivery mechanisms; Review CP6 workbank with potential funders to seek opportunities
- For each franchise competition, ensure System Operator is provided with all potential franchise-funded opportunities
- Identify priority list of LNW priority enhancements for which to pursue and secure external funding; Secure funding for all enhancements in C
- Lead the implementation of the "Open For Business" recommendations in LNW
- Meet each customer, stakeholder and potential funder on a regular basis; create primary stakeholder relationship owners
- Augment Stakeholder Engagement Plan to include activities to better-engage the 3 Combined Authorities; develop account plans for nominated significant customers
- Regular meetings with suppliers consultants: to understand their current capability; elicit feedback on Open for Business.

ANALYSIS

The Business Development team will continually during CP6

- Undertake market research into funding, financing and delivery mechanisms
- Explore opportunities with new to rail organisations
- Continue engagement with established stakeholders to identify market changes and further opportunities

IMPLEMENTATION PLAN

Activity	Sub-activity	Task Area	2018/19				2019/20				2020/21				2021/22				2022/23				2023/24			
			10/18	11/18	12/18	01/19	10/19	11/19	12/19	01/20	10/20	11/20	12/20	01/21	10/21	11/21	12/21	01/22	10/22	11/22	12/22	01/23	10/23	11/23	12/23	01/24
1	Develop the rail development team	Recruit and develop rail development team																								
2	Develop the rail development team	Recruit and develop rail development team																								
3	Develop the rail development team	Recruit and develop rail development team																								
4	Develop the rail development team	Recruit and develop rail development team																								
5	Develop the rail development team	Recruit and develop rail development team																								
6	Develop the rail development team	Recruit and develop rail development team																								
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17	Develop the rail development team	Recruit and develop rail development team																								
18	Develop the rail development team	Recruit and develop rail development team																								
19	Develop the rail development team	Recruit and develop rail development team																								
20	Develop the rail development team	Recruit and develop rail development team																								

TARGET STATEMENT

Our vision for CP6 is to explore every opportunity to secure funding for projects to grow the railway. Our priorities will be to secure funding for rail enhancements to:

- Accommodate passenger and freight growth: this would include passenger capacity issues at stations, depots / stabling works and enabling longer or more trains.
- Support economic growth across the West Midlands and the North West
- Meet local needs identified by our partners and stakeholders

We intend to explore all potential opportunities for third party funding or financing, working with a wide range of bodies, including businesses, local authorities and sub-national transport bodies.

The LNW CP6 external funding target is:

2019/20 - £54m CP6 Total - £ 288m
2020/21 - £ 54m
2021/22 - £ 60m
2022/23 - £ 60m
2023/24 - £ 60m

- Delivery against a suite of targeted KPIs will be monitored on a periodic basis through CP6

Appendix E Risks

The current Level 2 risks identified by LNW Route have been catalogued and assessed by completing a risk bow tie, which has identified the causes, consequences, mitigations, opportunities and threats. These are summarised in the table below.

LNW Route L2 Risks

Risk Title	Risk Description	Control / Mitigating Action	Reference to where action is covered	Proposed management actions in CP6
Safety - Workforce	There is a risk of failing to prevent fatalities or significant injuries to Network Rail employees resulting in loss of employee/union engagement	<ol style="list-style-type: none"> 1. Proactive management of risks through continuous improvement. Monitoring by SHE Exec and visualisation 2. Reactive management to improve processes such as accident investigation, audit and assurance activities 	ERR L2 Bow Tie	See Sections 3, 4 and 11
Safety – Level crossings	There is a risk we fail to safely manage the infrastructure and interface with the public at level crossings, leading to potential collisions, significant train accident and/or injury/fatality	<ol style="list-style-type: none"> 1. Risk assessments and controls in place 2. Proactive identification of closure candidates or risk reduction opportunities 3. Information and instructions at crossings 4. User engagement – letters, awareness days, LX camera safety van 5. Competency arrangements for signallers 6. Fatigue monitoring of signallers 7. Safe operation of equipment 	ERR L2 Bow Tie	
Safety – Public at stations	There is a risk of failure to prevent fatalities or injuries to station users resulting in harm, financial compensation, enforcement action or damage to reputation	<ol style="list-style-type: none"> 1. BTP support and presence 2. Station information and management procedures 3. Inspection and maintenance regimes 4. Weather and incident response plans 5. Competence management and monitoring 6. Provision of equipment 7. Disability awareness and training 	ERR L2 Bow Tie	
Performance	There is a risk of not achieving the TOC regulatory targets for PPM MAA and CaSL MAA in CP6 for our lead TOCs resulting in loss of reputation and financial penalties	<ol style="list-style-type: none"> 1. Targeted and prioritised renewal plans 2. Competent renewals contractors appointed with robust NR supervision. Route also supported by internal Works Delivery organisation 3. Competent maintenance staff delivering maintenance in accordance with company standards 4. Compliance with and utilisation of long and short term timetable planning rules 	ERR L2 Bow Tie	See Section 3 and 6

Risk Title	Risk Description	Control / Mitigating Action	Reference to where action is covered	Proposed management actions in CP6
HS2	There is a risk of an adverse impact on LNW key business objectives prior to and during the construction phases of HS2	<ol style="list-style-type: none"> 1. Influence HS2 governance structures to ensure LNW Route concerns are recognised and addressed 2. Establish integrated planning organisation to manage HS2 activities (HALO) 3. Undertake modelling of impacts on infrastructure to assess if changes to timetables are required 	ERR L2 Bow Tie (Also managed as a Level 1 risk corporately)	See Section 9
Earthworks	Failure of the earthworks asset leading to a major incident (e.g. collision, derailment)	<ol style="list-style-type: none"> 1. Earthworks examinations and evaluation 2. Extreme weather action plans 3. Drainage inspections and renewals 4. Operational procedures in the event of failures 5. Infrastructure design 	ERR L2 Bow Tie	See Section 7
Cash Compliance	Overspending/underspending against the routes cash envelope (Income, Opex, Renewals)	<ol style="list-style-type: none"> 1. Regular business reviews 2. Application of finance regulations, policies and assurance – regularly reviewed and communicated to budget holders 3. System controls supported by governance e.g. investment panel, claims panel, people panel 4. Efficiencies programme which is owned, monitored and actioned 5. Strategic business planning process and rolling forecast 	ERR L2 Bow Tie	See Section 8
Access and Logistics	The Route failing to support and deliver the committed work bank up to and inclusive of 2026	<ol style="list-style-type: none"> 1. Control processes such as Network Code, de-confliction (national), change control. 2. Engineering access planning 3. Industry Access Plan/ HALO 4. ADCCP and portfolio review group (internal governance structure) 	ERR L2 Bow Tie	See Section 11
Train Accident	A train accident due to a failure in the application of network rails processes and procedures.	<ol style="list-style-type: none"> 1. Asset specification 2. Maintenance and inspection procedures including signalling maintenance handbook/specification 3. Plan delivery e.g. vegetation, seasonal 4. Railway group standards/operating procedures 5. Staff surveillance and assurance. 	ERR L2 Bow Tie	See Sections 4, 5, 7 and 11

Risk Title	Risk Description	Control / Mitigating Action	Reference to where action is covered	Proposed management actions in CP6
CP6 Deliverability	Failure to deliver CP6 Renewals final determination volumes and meet corresponding LNW scorecard measures	<ol style="list-style-type: none"> 1. Periodic sponsor reviews and challenge 2. Integrated planning e.g. HALO 3. Proactive delivery outside of high risk adverse weather season. 4. Route exec, financial governance process 	ERR L2 Bow Tie	See Section 11
Timetable Change	There is a risk of delay in the introduction of required Infrastructure (NWR) and / or lack of resource (train crew / trains) causes widespread delay and/or cancellation of the planned services resulting in severe reputational and financial impact.	<ol style="list-style-type: none"> 1. Project governance and assurance review process. 2. Timetable readiness reviews and challenge. 3. Compliance with and utilisation of Long and short-term timetable planning rules. 4. Timetable robustness checks and error correction process 	ERR L2 Bow Tie	See Section 6
Route Sponsorship	There is a risk of failure to deliver the LNW CP6 regulated milestones as specified in the CP6 Enhancement Delivery Plan without significantly disrupting the operational railway	<ol style="list-style-type: none"> 1. Asset Delivery & Change Control Panel 2. Route Panel 3. Stage gate reviews 4. MBR/QBR 	ERR L2 Bow Tie	See Section 11
Resources	There is a risk of failure to maintain a suitable and sufficient workforce to deliver LNW Route objectives	<ol style="list-style-type: none"> 1. Emerging talent programme and succession planning 2. ROS Steering Group 3. LEAN methodology 4. Competency frameworks 5. People Exec 6. Self-assurance process 	ERR L2 Bow Tie	See Section 5 and 11
Business Continuity Management	There is a risk that failure to recover from a business interruption to pre-defined output levels and within identified timescales, resulting in an inability to run a train service, significant customer dissatisfaction, financial loss or reputational impact	<ol style="list-style-type: none"> 1. Succession plan for key posts 2. Business continuity programme 3. Business impact assessment of key areas 4. Asset management strategy 5. Route industrial action contingency plans 6. Communications strategy 	ERR L2 Bow Tie	See Section 4 and 5

Appendix F Scenario planning

Part 1a: Contingent renewals

This section describes the benefits of additional investment in the route which could be enabled should risks fail to materialise.

Package ID	Package title	Description	CAPEX (£m)	OPEX (£m)	Justification for spend
C1	Primrose Hill Axle Counters	Full duplication of axle counter heads & provision of meta-section data to improve asset reliability	0.5	0	To improve asset reliability and reduce the likelihood of service affecting failures on this critical infrastructure
C2	Chiltern ATP	Create a pipeline of designs for Chiltern ATP replacement	1.0 pa	0	Provide flexibility within the project programme so that areas can be accelerated where funding permits.
C3	Signalling asset sustainability	Accelerated programme of asset painting (signals and apparatus cases). Additional vegetation management for signal visibility	2.0 pa	0	Improved asset life and reduce likelihood of wrong side failure due to signals being obscured.
C4	Signalling materials	Advance purchase of materials for future years renewals programme	2.0 pa	0	Acceleration of spend from future years.
C5	Structures Minor Works	This item will deliver non-complex maintenance works to structure assets that have been identified as needing repair in CP6. These works aim to prolong the life of the asset and minimise potential disruption to the infrastructure e.g. mitigate safety and performance risks to the operational railway.	2.5 pa	2.5m pa	Increased minor works CAPEX/ OPEX spend in CP6 will optimise usage of in-house delivery mechanism to maintain the asset in a safe and functional condition by addressing prioritised defects identified through the examination process
C6	Structures Developed Renewals	Implementation of existing developed Renewals which have been substituted by emerging Renewals (level 1 policy activities) identified through the process of examination / assessment recommendations and work item management.	Circa 7.0 pa	0	Will deliver additional risk reduction benefits and reliability improvements
C7	Post Tensioned structures	Emerging renewals associated with review of Post Tensioned Assets following the bridge collapse in Genoa in Italy	5.0	0	Reduce train accident risk and improve sustainable management of the structures assets
C8	Recovery of redundant substations	WC PSU has left LNW with a large number of redundant K11 substations.	1.0 pa	0	Redundant buildings are a maintenance liability and present an unnecessary risk during high winds.
C9	E&P CP7 Development	Development of CP7 schemes	0.2 pa (Years 4 & 5 only)	0	Ability to get design ready for early start in CP7. Applicable to years 4 & 5 only.
C10	Redundant Lighting column removal	Removal of redundant lighting columns that have not been in maintenance since privatisation.	0.5	0	Further reduction of train accident risk
C11	Ceramic Insulator Renewals	Renewal of ceramic insulators on Hadfield / Glossop ex-DC lines	0.5	0	Performance improvement
C12	OLE Neutral Section APC Magnets	Renewal of APC magnets	0.5	0	Improved maintainability (E&P & Track) Reduces manual handling

Contingent renewals proposals continued

Package ID	Package title	Description	CAPEX (£m)	OPEX (£m)	Justification for spend
C13	CBC3 Earthworks Line of Route Campaign	Refurbishment of Earthwork, Drainage and Off-Track Assets to extend their design life and to reduce risk to the operational railway	8.3	0	Delivery efficiency and ability to deliver large volumes of non-complex work on low critically lines that will as a minimum allow earthwork condition to be maintained at current levels
C14	PBJ Sandwell Valley Nature Reserve Cutting	Remediation of a section of cutting that is exhibiting signs of failure that is adjacent to a Nature Reserve	2.3	0	Deferred renewal site in a sensitive location that will improve asset condition, weather resilience and reduce train accident risk
C15	SAC Earthworks Line of Route Campaign	Refurbishment of Earthwork, Drainage and Off-Track Assets to extend their design life and to reduce risk to the operational railway	3.7	0	Delivery efficiency and ability to deliver large volumes of non-complex work on low critically lines that will as a minimum allow earthwork condition to be maintained at current levels
C16	Earthworks associated drainage	New build, renewal, refurbishment and maintenance of earthworks drainage ditches and channels at various locations	11.4	0	Improve weather resilience and reduce train accident risk
C17	CBC2 Lowca	Soil cutting remediation	1.0	0	Deferred renewal site in a sensitive location that will improve asset condition, weather resilience and reduce train accident risk
C18	Third party slopes	Works to top 4% of third party slopes (Max Class E, criticality score 1)	1.0	0	Reduce risk to the railway from adjacent third party slopes
C19	MCJ2 Aylesbury Vale embankment	Remediation of a section of embankment that is a persistent "rough ride" report location and ESR/TSR site due to the underlying nature of the geology	1.2	0	Deferred renewal site that will improve train performance as well as reduce train accident risk
C20	Car Park or Road resurfacing.	Car Park / Walking Routes and Road resurfacing works.	1.0	0	Customer / Passenger satisfaction and the reduction of possible claims.
C21	Possible TOC delivered items at stations and depots	Minor works such as kitchen/ heating renewals	1.0	0	Customer satisfaction
C22	Signal Box buildings renewals	Minor works such as kitchen/ heating renewals	1.0	0	Staff satisfaction
C23	LED lighting renewals at stations	Further lighting renewals at stations using LEDs	4.0	0	Working with TOCs to help them meet their franchise commitments in an aim to reduce energy consumption
C24	Safe Cess walkways	Renewal and refurbishment of walkways	0	0.5	Supports reduction in LTIFR
C25	Access points	Renewal and refurbishment of access points	0	1.0	Supports reduction in LTIFR
C26	Handsworth Memorial Cricket Club UWC(t)	Deck renewal	0.08	0	Crossing is in top 10% highest risk LCs in LNW. Provides access to land-locked sports club. No concerns about crossing misuse so not an immediate priority but the deck is worn and would benefit from renewal
C27	Coundon Road CCTV LC	Deck renewal	0.08	0	Crossing is in top 10% highest risk LCs in LNW. No concerns about crossing misuse so not an immediate priority but the deck is worn and would benefit from renewal
C28	Fowler's Park FP	Supplementary Audible Warning Device (SAWD)	0.03	0.003	Crossing is in top 10% highest risk LCs in LNW. oMSL discounted due to site constraints. TSR currently imposed to mitigate the crossing's use by vulnerable users during the NTQP.

Part 1b: Investment options

This section describes the benefits of additional investment in the route which could be enabled should additional funding become available.

Package ID	Package title	Description	CAPEX (£m)	OPEX (£m)	Justification for spend
A1	WCML plain line renewals	Additional plain line renewals in years 3, 4 & 5	10.0	0	Marginal improvement in CSI and CRI. Helps protect WCML performance.
A2	Additional rerailling & repadding	Additional rerailling & repadding in years 4 & 5	13.5	0	CSI decline improves from 8.4% to 8.2% CRI decline improves from 9.0% to 8.7%
A3	Additional S&C renewals	Wembley Central Station renewal & Blisworth abandonment	4.5	0	Improves CP6 S&C renewal spend profile and delivers marginal performance benefit
A4	Jointed track removal	Jointed track removal on Cumbrian Coast and Wigan – Southport in years 4 & 5	14.0	0	Supports likely traffic increase on Cumbrian Coast and delivers marginal improvement to CSI and CRI
A5	Aston recontrol	Relocation of control to WMSC	5.0	0.5 <i>saving pa</i>	Further concentration in WMSC to improve strategic control, OPEX savings
A6	Worcester resignalling	Accelerate resignalling to remove seven mechanical boxes	111.0	2.0 <i>saving pa</i>	Progress work in stages to achieve Route, TOC and local aspirations
A7	Watford D.C. Lines signalling life extension	External renewal & recontrol of assets on the D.C. lines between Camden & Watford	39.0	0	Accelerated renewal of old assets to improve reliability and centralise control at ROC
A8	Settle & Carlisle Resignalling	Settle & Carlisle line resignalling using modular signalling technology.	40.0	2.0 <i>saving pa</i>	Accelerated renewal of old assets to improve reliability and centralise control at ROC
A9	Metallic structures	Refurbishment and renewal works to metallic structures. Works to individual assets are likely to include a mix of activities from different Policy activity levels.	40.0	0	Metallic bridges are likely to worsen significantly in condition if we fail to repair, paint and waterproof regularly enough. The work includes multiple drivers for intervention, i.e. delivering good value (in terms of risk reduction and reliability improvement) for each intervention and improving sustainability
A10	Large masonry viaducts	Slab, waterproofing, refurbishment works to large masonry viaducts	25.0	0	Since the average age of these structures is 120+ years, it is predicted that an increase in preventative and strengthening works will be required in order to safely maintain, and subsequently increase their performance into future control periods. Water penetration is the precursor to the principal modes of degradation for large Masonry structures and installation of waterproofing systems below the track will prevent deterioration beyond the optimum economic point of intervention resulting reduced maintenance costs in future control periods. It also delivers additional benefits in terms of risk reduction, and reliability and sustainability improvement
A11	High consequence retaining walls	Preventative interventions at 'High Consequence' Retaining Walls following implementation of recommendations following the RAIB investigation into the Lime Street Retaining Wall failure	5.0	0	Reduce train accident risk and improve sustainable management of the structures assets
A12	Signalling power suppliers	Provision of reconfigurable power supplies in CP6 signalling renewals where the base specification currently excludes	15.0	0	Performance improvement
A13	OLE wire height at stations	Addressing wire height at stations in accordance with GL/RT1210	6.0	0	Safety improvement

Investment options continued

Package ID	Package title	Description	CAPEX (£m)	OPEX (£m)	Justification for spend
A14	Bushey Feeder Station	Installation of neutral section at Bushey Feeder Station and recovery of Wembley Neutral Section	20.0	0	Performance improvement
A15	Further high criticality earthwork cutting sites	Undertaking work on earthwork cutting sites that have either been identified in CP5 or existing deferred renewal sites that have deteriorated such that the risk they now present to the infrastructure/third parties is unacceptable	18.6	0	Reduce train accident risk and improve train performance, weather resilience, and asset sustainability
A16	Further high criticality earthwork embankment sites	Undertaking work on earthwork embankment sites that have either been identified in CP5 or existing deferred renewal sites that have deteriorated such that the risk they now present to the infrastructure/third parties is unacceptable	11.6	0	Reduce train accident risk and improve train performance, weather resilience, and asset sustainability
A17	Alarm System for Earthwork Cuttings	Use of existing system being trialled on NR infrastructure to warn of slope failures during periods of adverse weather	10.3	0.5	Reduce train accident risk and improve train performance
A18	Deferred earthworks renewal Sites	Programme to undertake works on earthworks currently on Deferred Renewal Register such that the ongoing risk is mitigated until such time as the planned scheme is delivered	7.0	0	Reduce train accident risk, and improve weather resilience and asset sustainability
A19	Accessibility requirements at stations	Works to improve compliance with the Accessibility Requirements (PRM-TSI and Design standards for accessible railway stations: a code of practice by the Department for Transport and Transport Scotland – March 2015)	46.0	0	Improve legislative compliance and passenger satisfaction
A20	Additional drainage works	Undertake further drainage renewals	25.0	0	Reduce train accident risk, and improve weather resilience and asset sustainability
A21	Further level crossing closures	The closure of high risk level crossings on the CWK3 (Merseyrail Wirral Line) via a Transport and Works Act Order (TWAO).	10.0 – 20.0	0.5 saving	Crossings on the Wirral Line are closely geographically grouped and carry a frequent train service. There are a number of busy road crossings. There is an excellent opportunity to repeat Anglia's TWAO strategy and to treat the crossings holistically, closing many whilst enhancing those that remain.
A22	Suicide prevention measures	Install additional fencing, lighting, cameras and speakers at stations etc	4.0	0	Prevent and help people with suicidal tendencies impacting railway operations
A23	Remote monitoring of buildings assets	Installation of electrical devices to record and report on the performance of M&E assets in lineside assets / buildings which contain electrical equipment which is critical to maintain the operation of the railway	5.0	0	Although we do carry out maintenance and inspection of our air conditioning equipment, if there is a breakdown then the electrical equipment is prone to overheat resulting in equipment failure / closure of the railway. Centrally monitoring the air quality of these buildings would permit earlier identification of possible issues

Part 2: decrease in total remaining expenditure for CP6

This section describes the impact of a 10% decrease in expenditure across CP6 based on all risk funding has been exhausted.

Asset	Outstanding CP6 expenditure	Maximum potential saving	Risk of curtailing expenditure				Comment on impacts/issues
			Safety	Performance	Sustainability	Reputation	
Track & Off Track	646	65	A	R	R	R	Severe impacts on all aspects
Signalling & level crossings	910	91	A	R	R	R	Rather than increasing the safety risk, we would take most assets out of use if funding was decreased
Structures	407	41	A	A	R	A	We would manage the impacts but the reduction in our ability to manage sustainability will be a significant issue
E&P	152	15	A	R	R	R	Severe impacts on all aspects
Earthworks	191	19	A	A	R	A	We would manage the impacts but the reduction in our ability to manage sustainability will be a significant issue
Buildings	253	25	A	G	A	A	
Drainage	156	16	G	A	A	G	
Total	2,714	272					

Key to risk colours

G: no additional risk

A: some additional risk

R: considerable additional risk

Appendix G Asset Strategy Statements

This Appendix includes our asset strategy statements for CP6 which summarise how LNW Route will apply national asset policy and local engineering

- Track
- Signalling
- Structures
- Earthworks
- E&P
- Buildings
- Drainage & Off Track
- Level Crossings



LNW CP6 Asset Strategy TRACK



Current asset performance

Sustainability

- The Plain Line Pattern Recognition (PLPR) system has successfully been introduced across LNW in CP5. Further work will take place to review the frequency of inspection, and use Risk Based Maintenance (RBM) analysis to create opportunities to optimise the inspection frequency, with the aim to maximise coverage on new routes in CP6
- The overall strategy is to adopt intervention options that maximise the life of the key components of the track asset, the sleeper or bearer. This will include implementing innovative processes such as rail milling in order to meet the capability and sustainability requirements with existing assets

Performance

- LNW track performance on high criticality lines remains good but the proposed expenditure in CP6 is below our preferred level. Accordingly, maintenance activity has been increased to maintain performance and minimise deterioration. We will also use train borne inspection data to identify defects and make early maintenance interventions using risk based maintenance regimes
- We are continually working towards a TSR-free approach within West Coast Mainline areas and our vision of track strategy looks at areas such as broken rails, cracked and broken crossings and cyclic top issues as key areas of business improvement

Safety

- During CP5, LNW has focused its efforts on the following to improve the overall safe performance of the track asset and safety for passengers and workforce
 - a) Broken rails – Introduced a 20ml dip angle intervention on 90mph and above lines. Implemented a strategic rerailing plan aimed at wear and service life and introduced capitally lead repadding of 5mm pad sleepers. Plans also focus on the continued reduction in pre 1976 rail, on the highest track category lines, and strategically when linespeed increases are introduced
 - b) Repeat Twist Faults – Set a target to reduce repeat twists faults, 50% reductions by the end of CP5. This has been supported by the roll out of PLPR and creation of actions to address the root cause of repeat twist faults
 - c) PLPR – Continued roll out of PLPR where ever possible. This has provided regular 4 weekly geometry information on the majority of LNW and candidate defects continue to fall. PLPR provides repeatable data and has drastically reduced the hours of track patrolling being undertaken red zone
 - d) Eddy Current – Eddy Current roll out in late CP5. This will replace visual inspection of RCF where UTU recording takes place. This improves the safety of our staff by reducing the number of hours carrying out visual inspection and will complement the current UTU testing plan, to provide greater visibility of defects in RCF
 - e) S&C Stretcher bars – During CP5, a risk based program of works has delivered the fitment of tubular stretcher bars as part of SIN126. This has improved the management of gauge throughout the moving part of the switches

Asset performance at the end of CP6

Performance

- The CP6 Strategy enables better decision making through the use of regular, repeatable asset data and implementation of RBM. This will enable maintenance engineers to set interventions limits suitable to deliver the required performance outputs. The renewals strategy aims to provide an asset suitable for RBM, by maximising the life of the sleeper and providing funding for increased drainage intervention

Sustainability

- During CP6, the used service life of the track asset will increase, due to the reduction in full renewals. To offset the impact of this, refurbishment work and re-ballasting will be deployed to maximise the life of the sleepers and S&C bearers

Safety

- Continued focus on optimising train borne inspections to reduce human intervention will enable improvements in safety for rail users and track maintenance engineer's teams. RBM will provide 'right side' interventions, which will also reduce the need for track inspection, and target defects before reaching the standard intervention limits

Summary of interventions

Route policy

- Our overall strategy is to maximise sleeper life and introduce under sleeper pads in all renewals to maximise future ballast life. To support this strategy, there will be an increase in refurbishment activity, primarily with S&C, replacement of 5mm pads in plain line and in-situ refurbishment of obsolete fastenings
- Eddy Current will provide detailed asset data to enable a strategic plan to manage RCF on LNW. Rail Milling will be introduced as a refurbishment treatment to reduce the volume of re-railing required in CP6. Introduction of rail milling will complement the grinding train plan, which will continue to manage the rail following rail changing or milling

Asset life/sustainability

- Plain line track renewals will focus on two main areas; maintaining performance on WCML and Chilterns, and delivering additional drainage to deal with underlying track quality issues. Weld repairs to crossings will be proactively planned, utilising fully automatic arc welding techniques (BV1000), which will be part of the whole life approach

Plain Line

- A summary of our proposed maintenance led interventions in CP6 is:-
 - Track Patrolling (BVI) – Reductions following full roll out of PLPR and RBM
 - Supervisors inspections – Reduction, not required where RBM regimes implemented
 - Supervisors Cab Rides – Reduction – not required where RBM regimes implemented
 - Visual inspection of Pre 76 rail – Reduction – Utilise UTU U15 and U8 testing to size instead of visual inspection.
 - Visual inspection of RCF – Reduction – Eddy current replaces visual inspection of plain line on UTU compliant routes
 - S&C Stoneblowing – Increased – roll out of new multipurpose fleet enables greater volumes to be delivered in CP6
 - Changing Sleepers – Reduction – Large scale sleeper changing delivered as part of Refurb
 - Manual Wet bed removal – Reduction – Targeted via RBM regimes and decrease with improvements in drainage
 - Changing Pads and Nylons – Reduction – majority delivered by refurbishment activity
 - Changing rail defects – Increase – expected increase of rail changed for defects such as dip angles, VLS and small pockets of very severe RCF, once eddy current has rolled out





LNW CP6 Asset Strategy

SIGNALLING



Current asset performance

Performance

- It is expected numbers of signalling incidents causing delay will meet Route targets. Currently we are not meeting all signalling targets. Due to delay minutes per incident increases seen with increasing traffic on the network, the target delay figures for the route are unlikely to be met at the end of CP5. A particular focus is being placed on methodically tracing the root cause of failures, especially repeat failures to improve the reliability of existing assets and improve our response to failures when they occur

Sustainability

- By the end of CP5 re-signalling schemes will have provided new assets at Gresty Lane, Liverpool Lime Street and Allerton, Runcorn, Halton Junction, Speke, and Ashton as well as new level crossings at Huncoat, Brierfield, Rufford, Low Mill, Rosewain (closure), Green Road, Whitbeck, and Low House. Enhancement projects as part of the Northern Hub, North West electrification, Halton BiDi Scheme and North South Wales JTI have increased capacity and improved asset life. CP5 has seen more signalling work than in previous control periods, and provides a fair asset base for CP6. Obsolete assets such as TDM69 have been totally replaced through the control period and success has been seen by recovering train operated points to release as spares for sites on the route to ensure a maintainable asset for CP6

Safety

- Level Crossing renewals have been prioritised above other assets in CP5 to remove Western Region level crossing barriers and Concrete Mark I pedestals (penguin) from the Route, and improve safety at these assets. Renewals funding has closed a level crossing and risk assessments at all level crossing sites prior to renewal have led to safety improvements. Safety improvements have also been made by renewal of Wigwag road traffic signals at level crossings to remove any 36W lamps. Signal structure condition was planned to decline through the control period in line with the future strategy for removal of signals under ERTMS schemes, with immediate safety concerns addressed by emergency works

Asset performance at the end of CP6

Performance

- Over the control period, owing to the reduction of track circuit volumes and increased volume of axle counters, our train detection failures are planned to decrease. This is also consistent with our signalling power system failures following the implementation of renewal and enhancements schemes in the latter years of CP5 and early CP6. This investment will provide a more resilient power system architecture with intelligent infrastructure capabilities built in

Sustainability

- We are proposing the reduction in asset life across our interlockings in the north will be offset by renewals scheme at Birmingham New Street and Rugeley / Colwich schemes. To address the degradation in the north, our workbank shows a 70/30 split north and south expenditure, plus we are embarking on the full renewal of the Crewe area as part of the plan, an intervention in a critical part of the signalling network in the north. Whilst the performance of points are expected to decline slightly, other signal failures are predicted to reduce leading to a net improvement over the control period. We will seek to reduce the effect of point failures through closer working with our maintenance teams to understand and predict the root causes of these failures.

Route policy

- We will be planning to carry out a full renewal on 4.8% of our asset base, and use detailed, granular asset condition data collected throughout CP5 under the ORBIS programme to target life extension on other assets. Re-signalling of the Crewe area to meet HS2 and Crewe Hub performance requirements have been submitted as part of our base plan submission

Asset life/sustainability

- Future development activity for works in CP7 is currently under further review due to the predicted level of renewals after CP6 (see Long Run Forecasts in Section 5.4.2 and Appendix F. In the meantime, we will work closely with the Digital Railway team and innovation towards the end of CP5 and through CP6 to understand how novel Digital Railway solutions might meet the needs of an increasingly ageing asset base. Detailed obsolescence strategies, combined with in depth knowledge of existing equipment and its condition will enable effective management of aging equipment. Average remaining level crossing life will decline by 4.3 years (from 12.2 in 18/19 to 7.9 in 23/24) as a result of this plan, but performance will be managed over this period with stealth upgrades using more reliable component parts

Interventions

- Twelve signalled level crossings will be renewed in the control period. Additionally, one level crossings will be subject to significant interventions during the control period. Experience developed in CP5 to maximise level crossing life by minimal external equipment renewal will continue in CP6 supported by risk assessed decision making
- In CP6 we will be touching 71 of the interlockings in the north with some minimal life extension work, and a further 12 interlockings will be re-signalled, renewing 802 complete Signalling Equivalent Units of equipment. (9.5% of the asset base). In the south, 4 interlockings will be re-signalled, renewing 400 complete SEUs of equipment. This will complete replacement of the last remaining 1960s vintage power signalling equipment on LNW(S) at Birmingham New Street and on the WCML south of Crewe in the Rugeley / Colwich area. Further works will be undertaken to address electronic system obsolescence, particularly on two interlockings in the West Midlands, and to undertake minor renewal works. In addition, the infrastructure associated with the ATP system on the Chiltern line will be replaced due to obsolescence of the system.

Service affecting failures

- Modelled data based on ICM RF8 2017:-

Delay Cat Name	2019/20	2020/21	2021/22	2022/23	2023/24	CP6
Points	787	791	795	798	799	
% Change over prior year		+0.6	+0.5	+0.4	+0.1	+1.5
Signals	794	798	783	782	767	
% Change over prior year		+0.5	-1.9	-0.1	-1.9	-3.3
Train Detection Failures	1002	1018	998	1001	980	
% Change over prior year		+1.5	-2	+0.3	-2.1	-2.2
Other Signalling Equipment	942	928	908	926	931	
% Change over prior year		-1.4	-2.2	+2	+0.5	-1.1

Maintenance

- A good proportion of signalling equipment is now maintained using risk based maintenance regimes, the focus on increasing risk based maintenance regimes in CP6 is expected to be on track assets rather than signalling. Signalling Equipment is increasingly monitored for condition, and there is expected to be a roll out of earth monitoring in equipment cases to add to the condition monitoring systems already in place for signalling supplies, points, track circuits, and axle counters. Signalling technicians are now highly skilled at using condition monitoring and event monitoring data, such that planned early interventions are seeing success at preventing failures. With new CBI systems installed and increasingly complex technology, the skill set and maintenance boundaries for signalling, IT, telecoms and E&P staff will become more specific, and detailed, with all staff increasing their competency requirements. At the same time with a lot of traditional mechanical equipment in the north receiving life extension in CP6, the expertise of the central locking team, which has been wisely utilised through CP5, will be called upon for the future

Safety

- Safety levels for signalling equipment will be maintained, managed by occasional performance reductions to permit equipment remaining in service, or receive life extension. Level crossing safety improvements at passive crossings have been scoped and an additional £25m of safety improvements are included as part of the sustainability funding. This includes upgrade of 25% of our passive level crossing to active in CP6 with the aim of providing active crossing controls on all passive crossings by 2039



LNW CP6 Asset Strategy

STRUCTURES



Current asset performance

Sustainability

- Asset knowledge gathered through improved asset management processes indicates that condition and capability measures are declining
- 1,200 weak bridges are to be assessed, using complex finite element analysis where necessary, to demonstrate capability and minimise the physical interventions required
- Structures assets are generally in excess of 100 years old and continue to degrade. Bridge condition marking index has identified a continued decline with 23% of principal load bearing elements (PLBE) in under bridges and 12% of PLBE's in over line bridges been in poor condition. These defects will be risk assessed and interventions prioritised to ensure essential safety thresholds are maintained and performance impacts minimised

Performance

- Structures asset performance in LNW has been improved during CP5 through increased expenditure on asset maintenance and risk reduction programmes. This has removed the backlog of higher risk component defects, high risk scour and vehicle incursion sites

Safety

- Our intervention strategies have delivered reductions in risk profiles in critical areas as detailed above but unplanned asset component failures continue to occur due to overall asset age driving continued reduction in asset condition and capability



Asset performance at the end of CP6

Sustainability

- With the investment levels proposed in this plan, the downward trend in asset condition is expected to continue with consequential impact on funding requirements in future control periods to maintain sustainability and safety levels. Metallic bridges (under and over bridges combined) are likely to worsen significantly in condition through the Control Period. We anticipate a significant decline due to available funding that will lead to increased corrosion to assets which are the most sensitive to changes in condition and highest contributors to safety and performance incidents within the asset group.

Safety & Performance

- We anticipate that with this plan the number of reported safety events will increase back to the same frequency experienced in CP4. We will mitigate this increasing safety risk through risk based examinations, additional monitoring and reactive works; only resorting to speed and loading restrictions as a last resort

Summary of interventions and route policy

Route Policy

- There will be a continued focus on risk reduction programmes in accordance with asset policy on scour, hidden shaft mitigation in tunnels, spandrel wall failures, asset signage and prevention of falling from heights

Asset Life/Sustainability

- The strategy will result in the selection of predominately “lowest initial cost” options been adopted rather than “lowest whole life cost”. Deterioration beyond the optimum economic point of intervention will increase costs in future control periods

Safety

- Maintaining critical safety requirements will remain the priority. Continued deterioration in condition will result in emerging defects requiring immediate intervention so increasing our focus on reactive and tactical management to effectively prioritise schemes. This will result in instability in the work bank

Key Schemes

- A continuation of the strategy adopted in CP5 to intervene with smaller repair solutions at larger number of assets to give the greatest impact on overall portfolio condition and performance means there will be fewer large and replacement interventions. The exceptions will be schemes to maintain major and critical assets; e.g. Multi-span masonry viaducts and post-tensioned bridges. Preventative schemes are also planned on Leven's and Esk Viaducts

New Technology

- We will minimise these negative impacts through the application of engineering excellence in the management of asset capability and risk, targeted application of asset monitoring and optimisation of in-house delivery mechanisms for best value
- Better asset information facilitated in CP6 through the rollout of the Civils Strategic Asset Management System (CSAM's) will allow improved prioritisation and timing of interventions to achieve safety and asset performance requirements

Service Affecting Failures

- Improved asset management processes and asset knowledge will allow the current levels of service affecting failures to be maintained in CP6.

Delivery Mechanisms

- We will continue to refine and develop our CP6 plan across all structures asset types to achieve as stable and constant work bank as possible to facilitate efficient delivery. This appraisal will be aligned with Policy advice to prioritise safety and performance objectives
- Where ever possible our submission contains volumes determined by 'bottom up' development. It currently comprises many schemes originally planned for delivery in CP5 but further refinement through prioritisation will be necessary



LNW CP6 Asset Strategy EARTHWORKS



Current asset performance

Sustainability

- Earthwork sustainability during the Control Period has improved with the CP5 entry Earthwork Condition Score being 1.85 against a current score 1.79 (which is ahead of the CP5 modelled exit score of 1.82). This improvement is largely due to targeted remedial works via Minor Works (LNW Route “Activ-E” programme) at high risk sites, completion of the asset register with all LNW Earthworks having been examined (with less than 0.001% non-compliance), and better use of existing Asset Management data

Performance

- LNW Route has had a large number of performance issues due to Adverse/Extreme weather events, some of which involved the closure of several routes for more than a month. The topography and geology of the route means that periods of extreme weather will continue to provide a risk to safety and performance. Earthwork failures have accumulated 58,000 minutes of delay at a cost to the route of £4.3m (excluding any remediation costs) for years 1 to 3 of CP5. Use of blanket speeds during periods of wet weather has helped to mitigate the risk of such events but at a cost to performance and Schedule 4 payments.

Safety

- Earthwork Safety during CP5 has been dominated by a large number of failures including major incidents such as Harbury, Eden Brows and Watford, the latter causing a serious derailment. The moving five year average for the route for CIV28 incidents stands at 34.2 per year, mainly due to a spike of 64 in 2015/16 from events due to Storms Desmond and Frank. This has by necessity led to a large number of interventions that are reactive rather than proactive and a “fix on failure” approach being adopted. Funding for these schemes has resulted in a build-up of “deferred renewals” as budget from identified items that were deemed less critical was diverted to these failed sites

Asset performance at the end of CP6

Sustainability

- LNW Route currently manages approx. 36,500 geotechnical assets. Based on the assumed CP6 funding levels, we currently plan to intervene on 3,326 assets (this number includes all renewal, refurbishment and maintenance activities) which represents interventions to 9.9% of our asset base
- This level of intervention represents a historic high, however this could result in further deterioration of the asset base from the CP5 exit levels as the number of Category ‘D’ and ‘E’ high risk sites are increasing

Performance

- Due to the large number of deferred interventions from CP5, the majority of available funding will primarily be focussed on the highest risk soil and rock cuttings with a small number of high profile embankment schemes. This will address approximately 35% of the 169 sites on the “Deferred Asset Register”
- We will also undertake further “line of route campaigns” during CP6 with their inherent delivery efficiency and ability to deliver large volumes of non-complex work on low asset critically lines that will as a minimum allow earthwork condition to be maintained at current levels
- Earthwork Performance during CP6 will be expected to be broadly in line with what has been experienced in CP5. Better use of Asset Management information and the increasing use of On-Track Plant will be used to minimise the use of ESRs/TSRs to mitigate the consequences of earthwork failure. Improved weather data and an understanding of what conditions lead to increased earthwork failures will also start to come on line

Safety

- The pattern of the majority of Earthwork Failures being caused by adverse/extreme weather is expected to continue into CP6 and the amount of interventions that are reactive rather than proactive will also remain at current levels. Unallocated budget provision for such events will be made at both a route and national level. The Drainage and Off-Track Teams Work Bank will be crucial in improving weather resilience to adverse/extreme weather events affecting the route
- In order to mitigate the risk of an earthwork failure event occurring at any perceived “at risk” sites (due to deferred renewals or adverse weather) not being remediated in CP6, Remote Condition Monitoring/Alarm systems (subject to the technology been available) will be rolled out across the route in the latter years of the Control Period. Where this is not applicable, such as on embankment sites, the use of the “in development” Earthwork Decision Support Tool to help predict potential issues, increased maintenance interventions to maintain track quality and ultimately ESRs/TSRs and will be employed to manage the risk

Summary of interventions and route policy

Asset Life/Sustainability

- Although the actual CP5 exit score is expected to be better than the modelled score, the level of funding expected in CP6 will result in a decline in the overall asset condition during CP6

Route Policy

- LNW Route policy will be to undertake works on sites on the “Deferred Asset Register” whilst having sufficient unallocated budget to remediate failure sites caused by adverse/extreme weather. Asset Condition deterioration will be minimised by the continuation of the “Activ-E” programme and “Line of Route” campaigns

Safety

- The bulk of the CP6 work bank will involve work being undertaken on soil and rock cutting slopes and this coupled with increased monitoring at Extreme Weather sites will be used to reduce the risk at high probability failure locations

Key Schemes

- Due to the increase in GRIP Stage 3 and 5 estimates, fewer major renewal schemes will be undertaken on LNW Route in CP6 than in CP5. However major interventions are planned at Blackthorn and Piddington embankment, Harbury Tunnel East Cutting and Arley Tunnel approach cuttings, all of which will see potential expenditure in the realm of £5-£15m at each site

New technology

- The increasing use of Remote Condition Monitoring/Alarm systems (subject to the technology been available) will be rolled out across the route in order to mitigate potential safety and performance concerns

CSAMS

- Better asset information in CP6 will mean that in many cases we will have the opportunity to revise our asset management approach from CP5. The introduction of CSAMS, the use of better monitoring technology, etc., will allow us to adopt a fully transparent whole life cost option rather than a potentially lower initial cost approach or a “fix on failure” methodology

Service Affecting Failures

- In order to better address the impacts of future adverse or extreme weather, we will co-ordinate with other asset teams, particularly Drainage & Off Track, to jointly identify and treat high risk locations to reduce the likelihood of future earthwork failures causing disruption to services





LNW CP6 Asset Strategy E&P



Current asset performance

Sustainability

- CP4 & CP5 delivery has been slower and more costly than anticipated. Increasing costs have led to more schemes being deferred into CP6. Cancellation of sections of the West Coast PSU will result in the need for continued upgrade of the traction power system for timetable growth beyond CP5.

Performance

- E&P asset performance has been maintained by targeted interventions such as OLE defect removal and signalling power cable testing and replacement. Minor works funding has been used where specific safety and asset performance risks have been identified

Safety

- In CP5 we are in the process of delivering safety related OLE campaign changes in publicly accessible areas. Phase 3 of this project will commence in CP6.
- We are delivering a programme of electrical safety improvement work. As part of this programme, we are introducing devices to provide Electricity at Work Regulations compliant isolations on our DC electrified routes and trialling of new isolation processes on our AC electrified lines.
- A programme of signalling power defect removal is ongoing. This work will be completed in CP6
- Emerging asset safety concerns are promptly addressed using minor works funding

Asset performance at the end of CP6

Performance

- To maintain performance at the CP5 exit levels with an ageing asset base, we will make use of predictive monitoring to intervene prior to failure of signalling power systems and we will expand the use of proven technologies to identify defective pantographs at line speed.
- We plan to employ more train borne monitoring to identify OLE defects prior to failure, and will use service trains to get the best coverage. New video analysis techniques offer a significant opportunity in this area.
- Installation of more granular signalling power monitoring equipment and isolation transformers will provide both safety and performance benefits by breaking up some of our largest signalling power distribution networks.

Sustainability

- The STE policy / scenario guidance applies maximum 'Asset Technical Life' to all assets, except where the RAM has an overriding safety concern. This will have a significant impact upon sustainability of the plan, particularly for conductor rail and DC switchgear assets where a future bow wave of renewals is inevitable.

Summary of interventions

Route policy

- Public and workforce safety has been prioritised
- We have adopted a 'predict and prevent' approach where renewal cannot be funded. Funding allowances have been made for 'minor works' interventions to support this approach
- Our most heavily used OLE will be subject to a heavy maintenance regime focussing on defect removal and reliability improving activities
- The renewal plan has been developed in accordance with STE guidance but we have exceeded the requirements where obsolescence poses an unacceptable risk

Asset life/sustainability

- Maximising asset life will inevitably reduce reliability and pose an increased performance risk if uncontrolled
- 'Predict and prevent' management of emerging defects and an increased reactive funding provision will largely control this risk

Interventions

- We will complete £70M of projects in CP6 which were due to be delivered in CP5 but have been deferred due to funding constraints
- Maintenance interventions in most areas will remain unchanged, except where we are undertaking condition monitoring to control the risk of renewal deferral. The new suite of signalling power working instructions will be embedded prior to CP6 – this will see a significant change in maintenance regime of signalling power assets

Service affecting failures

- Our predominant service affecting failures during CP5 have been caused by OLE and signalling power assets. We are continuing to complete OLE campaign changes, increase our focus on OLE defect removal and signalling power distribution renewal





LNW CP6 Asset Strategy

BUILDINGS



Current asset performance

Sustainability

- Our current stewardship measure for stations has slightly improved since the start of CP5 whereas the reverse is the case for LMD's. There has been a significant increase in the number of faults being recorded on all asset groups, which is in part due to a deteriorating asset base, but also an improved fault reporting during the annual visual and 5 yearly detailed inspections of stations. The proposed CP5 accommodation strategy for MDU's did not receive funding with a resulting increase in safety related issues. Lineside assets continue in steady state although we have yet to fully evaluate the outputs of the CP5 Asset Data Information Project (ADIP) surveys

Safety

- Safety related fault volumes have increased mainly at MDU's and LMD's together with the inclusion of the Close Calls initiative. The focus of the CEFA surveys has been to focus on the high risk assets and reduce the risks posed by failures to these to both passengers and staff. The Buildings asset base has suffered from safety failures, but given the volume of passengers and workers utilising building assets daily, our risk level remains sustainable. Prime focus in CP5 was our structural capability of our assets, whereas in CP6, we are looking at a shift towards non-structural assets

Performance

- Performance of the asset continues to meet aspirations, however we have seen an increase in service affecting failures from a Buildings perspective with an increase in asset failures during CP5. We are looking to arrest this trend with a re-focus on risk based examination and targeting our planned preventative maintenance activities to most like assets to fail



Asset performance at the end of CP6

Sustainability

- Sustainability for stations will start to decrease due to limitations in repairs budget from the OPSAP project also we have identified a much larger budget for LMD, Lineside and MDU assets which ultimately impacts on the overall percentage share for stations. We will need to work much more closely with the station operators to not only are the maintenance obligations of both parties adhered to but they are delivered in the most efficient way and by those best placed to do. Best use will need to be made of access opportunities to drive costs down

Performance

- The increased asset knowledge, as a result of the ADIP and OPSAP (Operational Property Structural Assessment Project) programmes will undoubtedly see an increase on the number of faults requiring intervention that may otherwise impact on performance. It is therefore crucial that these risks be ranked and prioritised to allow mitigation. Without any additional budget being identified within CP6 then is likely that the risk to operational performance will increase

Safety

- The reduction of safety incidents will always be the primary objective. Due to a deteriorating asset base there is the potential for safety related fault reports to increase. We intend to introduce risk based asset inspections to reduce the potential risks and increasing our planned and reactive minor works budgets

Summary of interventions

Route policy

- Our approach is aligned with the national policy with some deviations and improvements due to local conditions within LNW. The CP6 plan will be largely maintenance driven interventions with a shift to a repair strategy than a pure renewals plan as per previous Control Periods. We plan to meet the proposed CP6 targets in terms of SSM and LMDSM for the Route, but also plan to improve our welfare accommodation and lineside building conditions, following a significant CP5 plan to understand our asset base more

Asset life/sustainability:

- Asset life will continue to be broadly maintained for our station assets through the control period. We will be working jointly with some Alliances and new franchisees on West Coast and West Midlands to create long term asset management plans for the asset base which are sustainably funded by all parties, whilst seeking 3rd party investment to improve those assets

Interventions

- We are viewing these over a much longer period than just the five year control period allowing us to begin removing the large cost estimate for full renewals being replaced by refurbishments or large scale repairs. Therefore, our interventions will be more frequent with larger volumes but lower interventions types to ensure we avoid costly full renewals in favour of cost-driven repair works designed to still meet customer outputs but at reduced costs. The in-housing of the CEFA team has allowed us to tailor the inspections and agree the methodology of the inspections to concentrate more on those assets that represent the most risk and identify suitable mitigation measures

Service affecting failures

- Within Buildings the ability to affect traditional railway measures (delay minutes, train PPM) is low due to the asset nature but the ability to directly affect customers, passengers and our workforce is incredibly high. To mitigate this, we are focusing on those assets which have a key interface and require close management by our teams and TOC's. We will continue to work hard with all of our stakeholders to provide a stable structure from which others can add the improvements for the customer. We are also planning larger interventions at our LMD's and MDU's to prevent additional asset failures / safety concerns which could seriously impact / close these facilities down. For Lineside we are completing our ADIP surveys to identify any immediate risks

Maintenance

- Our maintenance approach has improved in CP5 and we will continue this trend in CP6. We have completed a huge examination and assessment process in CP5 to understand our assets and their capability. In CP6, we will build on this knowledge by creating cost effective maintenance regimes looking towards LEAN principles with our Works Delivery colleagues. The significant challenge will be legislative compliance within the building portfolio. More than most of the other assets, the Buildings teams have over 50 statutory compliance measures to adhere to, all of which require robust plans and funding to achieve compliance. Our plan includes a step change to compliance, but the cost of this cannot be underestimated, especially when managing vast numbers of the public

Safety

- CP6 schemes are prioritised on a number of factors, safety being the main driver behind the risk, requirement to intervene, when to intervene and level of intervention. We will maintain the asset management Risk Register to allow for identification of additional Route funding



LNW CP6 Asset Strategy

DRAINAGE & OFF-TRACK



Current asset performance

Sustainability

- The Industry sustainability measure for drainage tracks improvements in drainage condition and declares change annually. As we have an incomplete drainage asset register with a lack of condition data the results, whilst displaying a positive trend, do not present an accurate picture of either the condition of the drainage or improvements being made. LNW Route is undertaking a minimum 3 year programme to capture drainage asset properties and condition. We also plan to improve asset records for vegetation and fencing assets, for which there is currently no sustainability measure. This will improve our ability to track the benefits of investment in CP6

Performance

- The level of investment in CP5 has led to a substantial reduction in the number of TSR's associated with formation failure and consequent improvement in performance. Reductions in flooding incidents on the West Coast mainline have led to improved performance, particularly in the Northern parts of the Route
- Substantial investment in the boundary measures on the West Coast mainline in CP4 and at high trespass risk locations across the Route in the early years of CP5 have brought substantial improvements in delay due to incursion. 24% of the fencing assets remain in poor or very poor condition

Safety

- Improved drainage is reducing the incidents of failure on associated parent assets (Track and earthworks), and the Route continues to invest heavily in Woodland Management (vegetation clearance) to achieve and maintain compliance. The Route and Stakeholder perception is that reductions in incidents are being observed on areas where drainage and vegetation activities have been undertaken

Summary of interventions

Route Policy

- The Drainage and Off-Track team manages a very diverse portfolio of neglected and underinvested assets. The CP6 plan allows for investment on all asset groups currently within our portfolio to varying degrees and the main focus for these underinvested asset groups (e.g. access steps, safe cess walkway, injurious species, RCM) will be on the development of asset registers and route specifications. This will allow planning for investment in CP7 and beyond
- For Fencing, the CP6 programme allows for compliance with current standards. Woodland (Vegetation) management is planned to deliver a lineside vegetation profile compliant to future standards with volumes based on what the industry can deliver. This pushes completion of the route programme for achieving a compliant vegetation profile into Year 1 of CP8

Service Affecting Failures

- Drainage volumes to be delivered have been risk-assessed against flooding or TSR imposition and have been compiled from schemes identified by the Route and Delivery Unit teams and deferred from CP5. As this volume for delivery significantly exceeds that possible in CP6 at currently predicted funding levels, no attempt has been made to achieve a Drainage policy compliant position. The degree of policy alignment has however been evaluated against the Drainage Decision Support tool
- Substantial improvements in asset knowledge and Route specifications are planned for CP6 and these will set the Route up for robust programmes of work in CP7 and beyond

Asset performance at the end of CP6

Sustainability

- There has been a historical lack of investment in Drainage and Off-Track assets and this plan represents a substantial increase in investment in these areas, albeit constrained by nationally set expenditure targets. In addition, the CP6 budget has been further supplemented by the RAM Track in recognition of the critical importance of drainage in preventing deterioration of track quality. A prioritised programme of drainage has been developed to maintain performance and improve the longevity of the formation renewals
- At the moment we are improving our asset data knowledge, to enable better decision making on our asset interventions and to understand their impact on overall asset condition. However we are confident that the focus provided by having a dedicated Drainage and Off Track team and by the increased funding levels will bring improvements in condition across all asset types
- Despite these increases in budget and delivery focus, we will not be able to deliver a fully Policy compliant asset renewals programme for Drainage

Safety

- This plan is based upon achieving compliance in vegetation clearance by CP8, and clearance in CP6 will therefore continue to target those locations which bring the greatest benefit in reducing risk. It is inevitable that high levels of reactive maintenance interventions will continue to be necessary on rural and freight routes (e.g. for signal or level crossing sighting issues) if performance is to not to be impacted
- We continue to prioritise the delivery of highway level crossing surfacing over-pedestrian and user-worked crossings in CP6 and will work closely with the RAM Level crossings to develop their investment programme to minimise safety risk. Changes to the standards planned for delivery in year 4 of CP5 will enable development of tools to better prioritise locations to minimise safety risk, but substantial investment beyond CP6 will be required to address all issues and achieve compliance





LNW CP6 Asset Strategy

LEVEL CROSSINGS



Current asset performance

Safety

- Detailed quantitative and qualitative risk assessment have been undertaken for all 770 level crossing within LNW, leading to a better understanding of risk than ever before.
- Level crossing risk itself has been reduced by 35% in LNW during the course of CP5. This has been achieved through a combination of crossing closures and asset interventions.
- In total, the Route has closed 78 crossings and downgraded the status of a further four.
- Asset improvement schemes will have delivered overlay Miniature Stop Lights (oMSL) at 12 level crossings by the end of the control period. Additionally, Red Light Safety Enforcement (RLSE) camera systems will have been installed at five higher risk Automatic Half Barrier (AHB) crossings, deck lighting will have been installed at every footpath level crossing, and all wigwag road traffic signals will have been upgraded to replace 36W filament lamps with brighter, modern lamps.

Performance

- Level crossing incidents have increased during CP5, due to problems experienced with level crossing motor brushes, and work is in place to rectify this. Near miss events and incidents continue to occur weekly, particularly at pedestrian and user worked crossings. As well as presenting a serious safety concern, the incidents cause delays to the network on each occasion, although the extent of delay depends on the location and nature of the event. The delay targets for the Route are unlikely to be met at the end of CP5.

Sustainability

- Level Crossing renewals have been prioritised above the renewal of other Signalling assets in CP5 in order to remove Western Region level crossing barriers and Concrete Mark I pedestals (penguin) from the Route, and to improve safety at these assets.
- By the end of CP5, re-signalling schemes will have renewed/upgraded level crossings at Huncoat, Brierfield, Rufford, Low Mill, Green Road, Whitbeck, and Low House.

Asset performance at the end of CP6

Safety

- Truly integrated management of the safety and engineering arms of the level crossing management structure to enable efficient and effective decision making across the Route's level crossing estate in the pursuit of level crossing safety.

Performance

- The introduction of more reliable level crossing components, modular level crossing systems, and the reduction in the number of passive level crossings is expected to deliver an improvement to the performance of the level crossing estate and its impact on train services. In particular, the installation of active warning systems at passive level crossings will facilitate the lifting of temporary speed restrictions associated with sighting distance deficiencies, and will introduce greater resilience against any future increase in user numbers or change in the demographic and character of users.

Sustainability

- For the first time, level crossings will be viewed as a standalone asset type in CP6. As we apply this change we will develop our understanding of asset sustainability across the complete level crossing system, such that we are better able to balance the often-competing engineering and safety demands for investment. It is anticipated that this will deliver improved sustainability through better asset data knowledge and singular focus.

Summary of interventions and Route policy

Route policy

- Level crossings represent one of the principle public safety risks on the railway. Accordingly, our CP6 level crossing asset management strategy places safety at its core, closely aligning with the national level crossing safety strategy. We will continue to increase the focus placed on level crossings within the LNW Route: for the first time, we will recognise level crossings as a standalone asset management category in its own right, as opposed to a series of subsets within other more established asset types (Signalling, Off-Track etc.). This shift will enable enhanced scrutiny of the level crossing estate promoting Network Rail's strategic aims and furthering level crossing safety. In particular, the change will better balance LNW Route's maintenance of the active level crossing estate with the objective to increase the number of active train detection warning systems on the network at passive level crossings.
- The CP6 level crossings plan consists of two main sections: asset condition-led upgrades and renewal interventions; safety-led crossing closures and asset improvements.

Upgrades and renewal interventions

- Nine level crossings will be renewed in the control period. Additionally, two level crossings will be subject to significant interventions during the control period. Experience developed in CP5 to maximise level crossing life by minimal external equipment renewal will continue in CP6, supported and underpinned by risk-assessed decision making.

Safety

- We will continue to embrace both the quantitative and qualitative risk assessment of level crossings via the All Level Crossing Risk Model (ALCRM), the Narrative Risk Assessment process, and our Level Crossing Managers' structured expert judgement. Their outputs will inform our asset improvement investment priorities, and we will continue to review and refresh these priorities throughout the control period to drive down risk in a targeted way.
- Our safety-led packages of work reflect Network Rail's key strategic aims for level crossings. We will: maintain a continued focus on targeted level crossing closures; significantly increase the number of active train detection warning systems on the network; prioritise the elimination of passive crossings; deploy technology to supplement and replace whistle boards and telephones; deploy new technology and innovation designed to maximise safety and performance.

Intervention	ID	Work type	No. of crossings	Net cost in CP6 (£m)
Upgrade passive to active crossings	1	iMSL	10	5
	2	oMSL	40	6
	3	Meerkat	45	3.6
Crossing closures	4	Strategic closures	20	10
	5	Opportunity closures as occasions arise	5	0.4
Total				25

- Although significantly reduced over successive years, the risk at passive footpath and user worked level crossings accounts for over half of the total level crossing risk on the network. In pursuing technology deployments, LNW Route's CP6 plan will target:- locations of high risk, high line speeds and high traffic volumes; footpath and brideway crossings with sighting deficiencies and whistle board protection; user-worked crossings equipped with telephones in long signal sections and/or subject to high signaller workload.

Asset life/sustainability

- Detailed obsolescence strategies, combined with in-depth knowledge of existing equipment and its condition will enable effective management of aging equipment. Average remaining level crossing life will decline by 4.3 years (from 12.2 in 18/19 to 7.9 in 23/24), but performance will be managed over this period with stealth upgrades using more reliable component parts.
- Targeted level crossing closures will continue to reduce the size of the level crossing estate, enabling future resources to be concentrated onto those crossings most in need of intervention and for which closure is not an option.

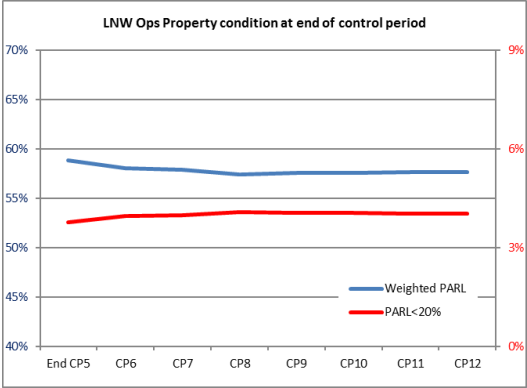
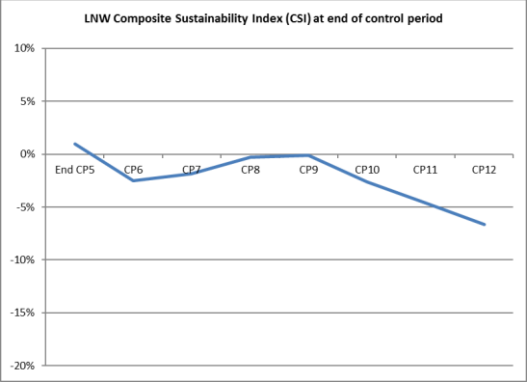
Maintenance

- With the rollout of new active warning systems across the passive level crossing estate, the maintenance burden will increase in CP6. This will be managed through a combination of approaches, including the modular design of overlay systems to facilitate non-disruptive maintenance on site, and the training of maintenance delivery units to ensure familiarity with the new overlay level crossing technologies.

Appendix H Asset by asset long term forecast

Asset	Condition trajectory	Comment
Track		<ul style="list-style-type: none"> Our track plan focuses on maximising the life of the bearer, by targeting capex funds on reballasting, repadding, milling and renewing rail. This combined with a move to risk based maintenance will enable the track asset to perform reliably in CP6 and have little impact on safety, as long as all the current standards and controls are managed compliantly The impact of constrained funding in CP6 will only be realised in subsequent control periods, if funding levels are not increased (as shown in section 7.5 above) to enable S&C renewals and wholesale track renewals to return to current levels in CP7 and beyond
Signalling		<ul style="list-style-type: none"> Average condition (RAL) forecast to decrease from 14.7 years at end of CP5 to 12.9 years at end of CP6 (-12%) predominantly due to aging asset base in the North of the route. Increased resignalling unit rates in CP5 and projected CP6 rates have resulted in less assets being completely renewed than predicted at the start of CP5. CP6 has less full renewal volume and more life extension leading to the reduction in remaining asset life Condition scores show a significant rising trend throughout CP7, CP8 and into CP9. This is largely due to forecast high volume renewals works required on the WCML (Preston, Warrington, Carlisle control areas) and other major routes. This presents a significant challenge going forward. We will look to work closely with the DR team and innovation to understand how novel DR solutions can help meet our future renewals demands
E&P		<ul style="list-style-type: none"> Asset remaining life is consistent with the age profile of the asset base Conductor rail policy is more reactive in CP6. Allowance for reactive renewal has been with an emphasis on maximum asset life to address the large bow wave of renewals due through CP6 and into CP7. This improves our baseline values on asset life with a continued gradual decline through CP8-CP12 Reduction in OLE asset life pays due regards to the current overall asset stock, not any future enhancements schemes to add new Electrification in CP7-CP12. If this does happen, asset condition may artificially improve, however the underlying Mk 1 asset life will continue to reduce. Mk1 equipment was used on the West Coast electrification between Euston, Birmingham, Manchester and Liverpool in the 1960's

Asset	Condition trajectory	Comment
Structures		<ul style="list-style-type: none"> Maintaining the proportion of principal bridge elements below the basic safety limit will result in the current level of failures continuing in future control periods with the consequential impact on Route performance Safety risk will be minimised through a focus on hazard reduction programmes and increasing use of structure monitoring. Operational restrictions will be required to mitigate safety risks associated with poor structure condition and capability
Drainage & Off Track	<ul style="list-style-type: none"> The bow wave in CP5 reflects the re-prioritisation of funding from parent asset groups (Track, Geotech and Structures) to address the long term under-investment in drainage and off-track assets Improvements in Asset knowledge in CP5 and years 1 and 2 of CP6 will permit a more robust evaluation of investment needs to improve drainage condition, as well as quantifying the currently unknown issues surrounding other off-track assets such as access points, safe walking routes, roads, incursions etc Extrapolating on current asset knowledge the levels of Drainage expenditure proposed for CP6 will also be required in CP7. From CP8 onwards, a reduction to steady state management would require around two thirds the current expenditure levels going forward In view of the current underfunding for a very wide range of other Off-track assets and activities it is likely that steady state management of the very varied portfolio would need to see levels around the current CP6 expenditure for the foreseeable future For all Drainage and Off-Track asset groups, maintenance expenditure will need to substantially increase above the current proposals in our CP6 plan as the asset information improves and activities transition to 'steady state' 	
Earthworks		<ul style="list-style-type: none"> Average Earthwork Condition will continue to deteriorate over the long term as assets that were constructed in the 1830s to 1890s approach the end of their design life Overall asset risk will be managed as targeted interventions deal with those earthworks in the higher risk "D" and "E" categories whilst more assets move from the lower "A" and "B" categories into "C" as they begin to age The rate of change shown in asset condition is based on a significant change at the end of CP6 which may not occur if sufficient funding is provided to allow more WLC interventions on non "D" and "E" assets

Asset	Condition trajectory	Comment
Operational Property		<ul style="list-style-type: none"> Condition of the asset base remains fairly consistent over the next few control periods, but PARL as a measure is slow moving in nature and cannot recognise short term issues over a small area of the asset base A number of factors cause concern within buildings including the mechanical and electrical assets located within them. These are interrelated and act cumulatively over an asset's life and, in some cases, may have been acting on an asset for many years. These factors include:- <ul style="list-style-type: none"> Environmental factors Operational environment – increased usage Legacy factors – heritage assets Capacity – overuse and undersized assets All these, linked with the environment within which the building operates, combine to create complex relationships which affect the long-term asset life. However, overall condition could be maintained with local discrepancies which could affect customer relationships, passenger satisfaction and stakeholder interface issues within our own non-stations portfolio
All		<ul style="list-style-type: none"> The overall Composite Sustainability Index (CSI) shows a deterioration of -3.5% from Control Period 5 (CP5) exit to the end of Control Period 6 (CP6) The overall effect on CSI in CP6 is due to the approach of refurbishment and life extension as opposed to comprehensive renewal of assets The impact of the CP6 Capital Expenditure investment will continue to affect the CSI in subsequent control periods if funding levels are not increased to enable wholesale renewals in CP7 and beyond

Appendix I Freight and National Passenger Operators Route Plan

LNW Route & Freight & National Passenger Operators (FNPO) Route

This summary sets out how the LNW and FNPO routes will work together to deliver the Route Strategic Plan for LNW. It outlines existing FNPO activity, and then describes the impact of the plans and aspirations of FNPO customers to grow and develop their businesses. It summarises what Network Rail needs to do to deliver these strategies and how, in doing so, efficiencies can be identified and realised.

National Passenger Operators:

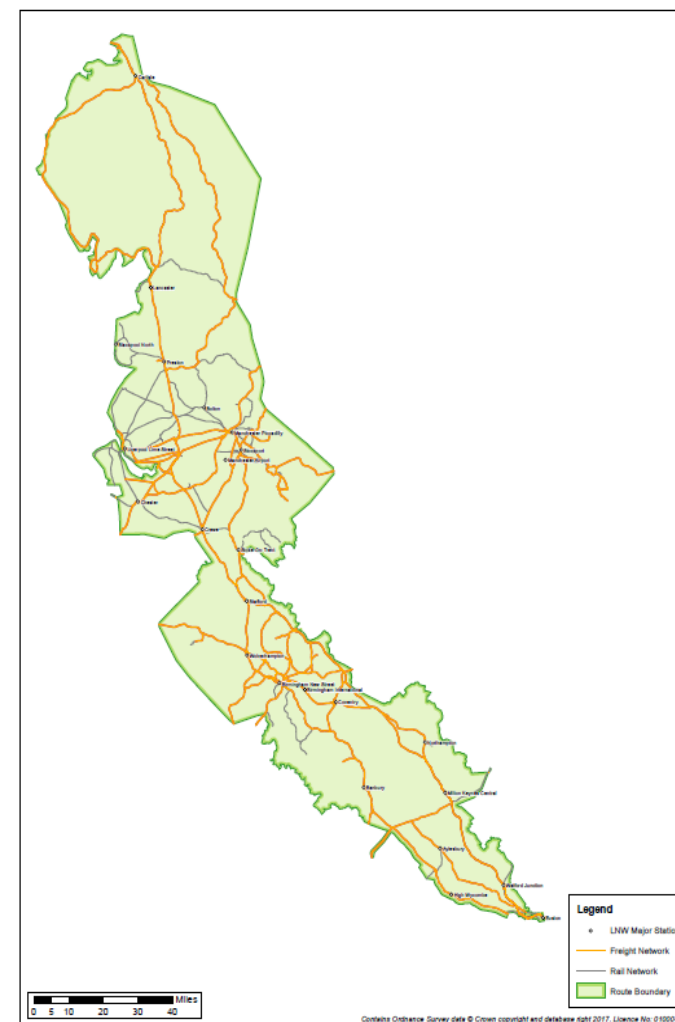
CrossCountry is an extensive user of LNW route and key issues include right time arrivals at Birmingham New St, as well as the management of fatalities and trespass incidents.

Caledonian Sleeper operates nightly services, six nights per week, from London Euston via WCML to Glasgow, Edinburgh, Aberdeen and the Scottish Highlands. These services rely on overnight availability and reliability of WCML and the longer platforms at London Euston station.

Charter trains operate across LNW Route, especially at weekends, to a variety of leisure destinations being hauled by both standard and heritage steam and diesel locomotives. This leisure market is expected to grow during CP6

Challenges and Opportunities

ID	Key Challenges, Risks and Opportunities	What we plan to do
1	<p>Aggregate Growth</p> <p>O: Volume growth from quarries in the Peak District area</p> <p>R: Capacity and capability. Infrastructure not able to cope with traffic demand.</p>	<ul style="list-style-type: none"> Explore opportunities for longer and heavier trains maximising loco capability Support introduction of new wagons that maximise payload/length ratio Support Terminal and Yard developments – e.g. Peak Forest and other locations required for sector growth. Support introduction of ‘pop-up’ terminals, bringing out of use infrastructure back into use and increased use of lineside loading Explore opportunities for new capacity – e.g. Buxton URS lengthening, trial longer trains



ID	Key Challenges, Risks and Opportunities	What we plan to do
2	Domestic & Deep Sea Intermodal Growth O: Volume growth from Ports / Terminals (Daventry, Hams Hall, Liverpool, Trafford Park) R: Train paths and SRT discrepancies with longer, heavier trains R: Capacity and capability, including gauge clearance and diversionary capability	<ul style="list-style-type: none"> • Work with customers to maximise opportunities to increase length of trains • Increase Average Journey Speed origin to destination • Explore provision of recognised diversionary routes with adequate capability • Facilitate new terminal developments at Daventry, Northampton, West Midlands and Parkside. • Explore opportunities for new capacity through better paths, longer trains, faster and cleaner paths.
3	Gauge establishment C: Establishment of recognised diversionary routes for gauge critical traffic	<ul style="list-style-type: none"> • Explore gauge clearance on key corridors and provision of diversionary capability • Explore funding opportunities, including Third Party • Documented diversionary routes for core intermodal flows • Review of RT3973 provision to more closely align with traffic flows – reduced duplication
4	Other Commodity Traffic Growth O: Coal O: Steel R: Biomass O: Automotive O: Forest Products O: Bulk	<ul style="list-style-type: none"> • Work with customers to maximise opportunities for longer and heavier trains maximising loco capability • Support Terminal / Yard developments to facilitate growth • Support introduction of 'pop-up' terminals, bringing out of use infrastructure back into use and increased use of lineside loading • Work with FOCs and Freight End Users to deliver new network connections and necessary capacity and capability, or bring out of use infrastructure back into use • Support the development and introduction of the West Cumbrian Mining traffic flow to Teesside and other locations
5	Logistics and Mail Opportunity O: Potential mail growth on main corridors and premium logistics developments	<ul style="list-style-type: none"> • Explore opportunities for business growth with existing and potential new customers • Continue to work with Royal Mail to improve performance and train service delivery
6	Franchise changes R: Refranchising of TOC in Route seeks greater capacity on shared lines	<ul style="list-style-type: none"> • Retain adequate capacity, capability and flexibility for existing and forecast freight • Review Impact on possession strategy from new flows • Review stabling plans for new rolling stock / change of locations
7	Infrastructure enhancements / electrification O: Greater capacity/opportunity following enhancement (East West Rail) R: Loss of Capacity following timetable change	<ul style="list-style-type: none"> • East/West Rail provision for gauge and freight diversions • Trans-Pennine provision for gauge and freight growth • Support Route forums (RSPG etc.) to influence scope and secure freight benefit following scheme delivery • FNPO, FOCs and Freight End Users to provide appropriate input into the decision making process • Work with Route Business Development team to identify potential Third Party funding sources
8	Construction projects / HS2 O: Opportunity for spoil and waste out and aggregate and other commodities in to support construction R: HS2 routing requires the removal and re-location of existing freight facilities	<ul style="list-style-type: none"> • Work with DfT, HS2 Ltd, FOCs and End-customers to offer solutions to demands of major projects • Work with customers to manage the impact of major projects on their business (HS2) • Terminal / Yard developments ('pop-up' terminals / lineside loading potential) • Work with FOCs and Freight End Users to resolve conflicts with existing freight facilities • Work with FOCs and Freight End Users to deliver new network connections and necessary capacity, or bring out of use infrastructure back into use

ID	Key Challenges, Risks and Opportunities	What we plan to do
9	SRFI Terminal Development O: SRFI terminal development supports intermodal growth especially addressing demand for inland terminals C: Securing of sufficient capacity to support SRFI developments through planning and into use	<ul style="list-style-type: none"> Work with Developers to understand SRFI proposals progression through planning Offer NR support to proposals when adequate strategic fit and capacity Work with System Operator to support funded early stage timetable work for SRFI developers
10	End User-customer service O: Closer working with FEU's enables greater understanding of customer priorities for future	<ul style="list-style-type: none"> Work with end-customers to develop business growth and support modal shift to rail Work with end-customers to strengthen service delivery and support
11	Review of redundant and unused assets; O: Following traffic changes in CP5 and structural change in energy market, opportunity exists to review size and organisation of non-passenger network R: FOC objection to supporting Network Changes	<ul style="list-style-type: none"> Identify opportunities to reduce maintenance costs and remove unneeded infrastructure Regularise the status of freight assets and other assets including gauge, S&C (actual v published capability) Explore potential to transfer ownership of redundant lines / assets to secure better opportunities for redevelopment
12	Yards and sidings infrastructure R: Yard and Siding Infrastructure asset condition is critical to avoid derailment events and customer LTI's	<ul style="list-style-type: none"> Working with Routes and customers to review asset condition on regular basis, Working with Routes and customers to establish and benchmark walking route use and condition
13	Timetable Review O/R: Timetable Improvements to closely reflect capability of trains and capacity of network required on busier network	<ul style="list-style-type: none"> Continuation of CP5 work to review path usage and remove unused paths and agree strategic capacity Work with FOC's to more closely align Train Slots in the Timetable with Access Rights in the TAC, and remove unused rights where there is no corresponding Train Slot Work with the Route, System Operator and FOC's/TOCs where in upcoming major timetable re-casts the available capacity may be less than contracted rights. Work with System Operator and customers to review opportunities to improve average speed origin-destination Review with System Operator and customers suitability of current systems to capture network constraints and traction capability (Loads Book, Timing Loads, Lengths)
14	Digital Railway O: Successful introduction of Digital Railway offers potential for growth on busiest corridors	<ul style="list-style-type: none"> Act as internal client on behalf of Freight to build sympathetic capability for freight traffic needs
15	Upgrades and Disruptive Possessions R: Major upgrade programmes such as HS2 which will require significant disruptive access	<ul style="list-style-type: none"> Champion requirements of FOCs and Freight End Users so that services can operate as required during disruptive possessions including availability of diversionary routes and timely provision of capacity studies to identify train service capability

CP6 Plan

Section	Key Themes	Strategy	Specifics	Owner	Timescale
Safety	Lost Time Incidents	Reduce LTIs through concentration on Network Rail yard infrastructure, connecting sidings and walking routes conditions.	<ul style="list-style-type: none"> Published rolling programme of joint health and safety visits with customers (FOCs/TOCs) to agreed sites Complete review of authorised walking routes/crew change locations per customer Subject to funding, a programme of improvements will be specified and implemented 'Go Look See' with customer within two weeks of any reportable customer LTI event on network infrastructure 	FNPO Operations and Safety Manager/ SRFM	Initial Programme to be published March 2018 then annually during CP6
	Freight Train derailments	Reduce freight train derailments through concentration on Network Rail yard and sidings infrastructure.	<ul style="list-style-type: none"> Published rolling programme of joint health and safety visits with customers to agreed sites End Customer Forum to be implemented to share issues of concern around connection points and maintenance either side of boundary point Subject to funding, a programme of improvements will be specified and implemented 	FNPO Operations and Safety Manager/ SRFM	Initial Programme to be published March 2018 then annually during CP6
	FNPO SPADs	Reduce freight SPADs by collaborative working	<ul style="list-style-type: none"> SPAD Forum to be implemented with FOCs to share learning and best practice 	FNPO Operations and Safety Manager	Creation of Forum by April 2018. meeting regularity proposed quarterly.
Performance	Right time departure performance at key hubs and terminals	Use Strategic Freight Corridors to focus delivery Measuring Right Time Departures from terminals at the start of the journey	<ul style="list-style-type: none"> Local Working Groups (e.g. Peak District, Daventry) Re-brief Freight Strategy – 'Freight Delivery Matters' and linkage between RTD and FDM delivery 	SRFM/ FNPO Performance Manager	Existing Working Groups to continue into CP6. Quarterly FNPO review of terminal arrangements.
	Measuring FDM and FDM-R	Focus on defined key routes: <ul style="list-style-type: none"> Asset Performance Asset Resilience Effective contingency plans 	<ul style="list-style-type: none"> Target FDM-R Route target for end CP6 of 93.9% Input to Route Contingency Plan for consistent application of freight contingency arrangements FSDM input to incident recovery real-time to build consistency Asset Reviews with Route Asset teams to share traffic forecasts and asset challenges with SRFM Influence at RSPG to define future asset strategy in terms of renewals to support freight growth 	SRFM/FNPO Performance Manager	Annual target setting during CP6. Periodic review of FDM-R delivery and key influencers
	Joint Freight Performance Improvement Strategies	Agreed joint strategy with each FOC including details of plans to reduce each delay area	<ul style="list-style-type: none"> Complete plan annually with each FOC concentrating on primary delay categories Agreed industry information share Regular reviews against plan with each Route and FOC customer 	FNPO Performance Manager/CRE	Joint Strategy Plan per Operator to be published annually during CP6 and reviewed quarterly

Section	Key Themes	Strategy	Specifics	Owner	Timescale
Capacity & Capability	Identifying future capacity and capability needs.	Bring together all freight capacity plans: <ul style="list-style-type: none"> Route Studies SFN Customer specific 	<ul style="list-style-type: none"> All future project specifications to include a specific output level for freight services, reflecting the SFN specifications and forecast future traffic requirements. Future Capability needs assessment to be undertaken – RA, Gauge, HAW – future plans for improvement to meet capacity requirements Interactive maps for Gauge, RA to be created and maintained Continued support for longer, heavier trains programme 	Project Sponsor/SRFM. FNPO Head of Strategic Capability/ FNPO Head of Network Management	Future capability programme definition by April 2018 and delivery per strategic route
	Review existing capacity constraints	Undertake Capability Review	<ul style="list-style-type: none"> Improved gauge and operational flexibility on key freight corridors Robust gauge cleared diversionary routes Transparent network capacity per route for customers 	SRFM/ FNPO Head of Strategic Capability/ FNPO Head of Network Management	Existing capacity constraints review definition by April 2018 and delivery per strategic route
	Freight Train Average Speed	Undertake Average Speed Review	<ul style="list-style-type: none"> Establish framework for average speed measurement and improvement Work with Stakeholders to target specific flows and services Annual plan in connection with annual timetable change 	FNPO Head of Performance/ FNPO Head of Capacity and Capability/ FNPO Head of Network Management	Measurement framework to be agreed by industry May 2018. Flows to be agreed for Dec 2018 TT change and annually thereafter
	Connections to new terminals and SRFIs	Facilitate connections to the network and associated capacity	<ul style="list-style-type: none"> Work with FOC's, Freight End Users and Developers to identify potential new connections, including development of SRFI's Information share of prospective sites via RSPG Facilitate new network connections Identify potential sites (new connections, bringing out of use infrastructure back into use and increased use of lineside loading) to facilitate growth, (West Cumbrian Mining for coal) Advice to System Operator of future sites and flows to understand timetable and capacity impact Timetable studies for major terminal developments, e.g. SRFI's 	SRFM/ FNPO Business Development Managers	Forward programme of FEU and Developer engagement to be agreed annually during CP6. Freight Developments Register to be held by SRFM for review at RSPG quarterly.
	Delivery of agreed CP6 freight enhancement programme	Continuation of Strategic Freight Network funding and industry governance group	<ul style="list-style-type: none"> Promotion of potential freight projects and enhancement schemes Prioritise funding to best meet demand and facilitate growth Align SFN proposals with Route and National proposals to deliver a coherent forward strategy which best meets overall requirements 	FNPO Head of Freight Development/System Operator	Ongoing
	Consideration of incremental freight improvements in all schemes	Structured review process with Route planners and Sponsors	<ul style="list-style-type: none"> Work with FOC's and System Operator to identify opportunities for incremental freight enhancements as part of the development of enhancement and renewals proposals, e.g. faster entrance/exit speeds into loops and through crossovers. Defined and consistent engagement process to be agreed with Route Planning team and Sponsors 	SRFM/ System Operator	Defined engagement process and inputs to be in place with Route Strategy by April 2018

Section	Key Themes	Strategy	Specifics	Owner	Timescale
Network Availability	Engineering plans that meet both FNPO customer and Route needs.	Regular and co-ordinated freight input into Engineering Access Statements Access Planning Requests	Engineering plans that are; <ul style="list-style-type: none"> • Transparent • co-ordinated • consistent across Routes • planned well in advance and • take into consideration contingency arrangements for long distance services 	SRFM/ FNPO Capability and Planning Manager	Annual review of process/requirements between FNPO and Engineering Planning from March 2018 incorporating end to end Engineering Access process
Freight Asset Management Plans	Effective asset management arrangements for yards and sidings infrastructure	Create a joint understanding of maintenance responsibility, traffic level changes and asset condition	<ul style="list-style-type: none"> • Enable Asset Management and Engineering teams to plan the targeted maintenance and renewals requirement of each site • Ensure appropriate standards in use at each location. 	SRFM/ Route COO/ RAM	Biannual review of yard and sidings maintenance priorities / traffic flows commencing 2018
	Review of Locomotive and Heavy Axle Weight (HAW) track and structure restrictions	Establish potential/cost for removal of restrictions	<ul style="list-style-type: none"> • Input into track/structures renewals and maintenance plans 	SRFM/ Route COO/ RAM	Review definition and programme issued by April 2018. Delivery per strategic route to be programmed.
	Review Freight Only lines and other infrastructure	Understand the potential to reduce OMR.	<ul style="list-style-type: none"> • Review based on existing & predicted future use • Input into track/structures/maintenance plans • Outputs to be agreed with customers/ORR 	SRFM/ Route COO/ RAM	Delivery of initial opportunities report by July 2018. Agreed Action Plan through CP6 per Route.
	Removal of TSRs / PSRs in timely fashion	Establish removal plan recognising freight impact	<ul style="list-style-type: none"> • Work with the Route teams to identify the impact of speed restrictions on freight services and work collaboratively to remove them. 	SRFM/ Route COO/ RAM	Ongoing periodic review of performance impact of TSRs to be agreed per Route

Appendix J List of supporting annexes

Annex 1: Change log

Annex 2: Long term scorecard

Annex 3: Efficiency Plan

Annex 4: ABP models

Appendix K Glossary of terms

Term	Definition
ADIP	Asset Data Improvement Programme (Network Rail)
ASLEF	Associated Society of Locomotive Engineers and Firemen
ASPRO	Asset Protection (works/team)
ATP	Automatic Train Protection
BTP	British Transport Police
BVI	Basic Visual Inspection
CAPEX	Capital Expenditure
CaSL	Cancellations and Significant Lateness
CCTV	Close Circuit TV system
CDM	Construction Design Management Regulations
CEFA	Civils Examination team
CIS	Customer Information System
COO	Chief Operating Officer
CP5	Control Period 5 (April 2014 - March 2019)
CP6	Control Period 6 (April 2019 - March 2024)
CP7	Control Period 7 (April 2024 - March 2029)
CR	Chiltern Railways
CSAMS	Civils Strategic Asset Management System
CWR	Continuous Welded Rail
DC	Direct Current (3rd Rail Electrification System)
DCMS	Dept. for Digital, Culture, Media and Sport
DPI	Delay Per Incident (Network Rail performance measure)
DfT	Department for Transport
DRHSEQ	Director, Route Health, Safety, Environment & Quality

Term	Definition
D&I	Diversity and Inclusion
DOO	Driver Only Operation
DR(P)	Digital Rail (Programme)
DRAM	Director of Route Asset Management
DRS	Director of Route Sponsorship
DU	Delivery Unit
E&P	Electrification and Plant
ESIP	Electrical Safety Improvement Programme
ESR	Emergency Speed Restriction
ETCS	European Train Control System
ERR	Enterprise Risk Record
EWAT	Extreme Weather Action Team
FDM	Freight Delivery Metric
FOC	Freight Operating Company
FNPO	Freight and National Passenger Operators Route
FPM	Financial Performance Measure
FTE	Full Time Employee
FTN	Fixed Transmission Network
FWI	Fatalities and Weighted Injuries (Index)
GRIP	Guide to Railway Investment Projects
GSM-R	Global System Mobile - Railway
HALO	HS2 Access and Logistics Organisation
HAVs	Hand and Arm Vibration
HoP&CRM	Head of Performance & Customer Relationship Manager

Term	Definition
HS2	New high speed railway north of London
HS2 Limited	Organisation developing and building HS2
HS2RD	High Speed 2 Sponsorship Director
IECC	Integrated Electronic Control Centre
IMS	Information Management System
IP	Infrastructure Projects (Network Rail)
IRJ	Insulated Rail Joint
LEAN	LEAN Continuous improvement process
LEP	Local Enterprise Partnership
LMD	Local Maintenance Depot
LOWS	Lookout Operated Warning System
LNE&EM	London North Eastern and East Midlands Route
LTIFR	Lost Time Injury Frequency Rate
LTC	Long Term Charge
MDU	Maintenance Delivery Unit
MSL	Miniature Stop Light
NRPS	National Rail Passenger Survey
NWEP	North Western Electrification Programme
OLE/OHLE	Overhead Line Equipment
OPEX	Operational Expenditure
ORR	Office of Road & Rail - industry regulator
PA	Public Address system
PAN	Pantograph
PLPR	Plain Line Pattern Recognition (Network Rail Programme)
PMO	Project Management Organisation
PPM	Public Performance Measure
PSP	Principle Strategic Planner

Term	Definition
PSR	Permanent Speed Restriction
PTE	Passenger Transport Executive
ONW	On Network Works (HS2 Interface works)
RAM	Route Asset Manager
RBM	Risk Based Maintenance (Network Rail Programme)
RETB	Radio Electronic Token Block
R&D	Research and Development
RDD	Remote Disconnection Device
RDD	Route Delivery Director
RDG	Rail Delivery Group
RECS	Redevelopment of Euston Conventional Station
RFD	Route Finance Director
RHTT	Railhead Treatment Trains
RIRG	Route Investment Review Group
RMD	Route Managing Director
RMT	Rail, Maritime and Transport Union
ROC	Railway Operating Centre
RPM	Route Performance Manager
RSSB	Railway Safety and Standards Board
S&C	Switches and Crossings
S&T	Signalling and Telecommunications
SAF	Service Affecting Failure
SCADA	Supervisory Control and Data Acquisition
SCC	Signalling Control Centre
SCO	Supply Chain Organisation
SEU	Signal Equivalent Units
SFN	Strategic Freight Network

Term	Definition
SFOs	Station Facilities Owner
SISS	Station Information and Security Systems
SOFA	Statement of Funds Available
SMS	Systems Management Signalling
SPAD	Signal Passed at Danger
SRP	Safety Review Panel
SSM	Station Stewardship Measure
STE	Safety Technical & Engineering (Function in Network Rail)
T&Cs	Terms and Conditions
TfGM	Transport for Greater Manchester
TfN	Transport for the North
TME	Track Maintenance Engineer
TOC	Train Operating Company
TPE	Trans Pennine Express
TPWS	Train Protection Warning System
TSRs	Temporary Speed Restrictions
TSSA	Transport Salaried Staff Association
TTP	Timetable Planning
WCML	West Coast Main Line
WD	Works Delivery (LNW in house delivery team)